Lectures on the Materia Medica.

by

Adam Kuhn.

Lectures on the Materia Medica.

The Materia Medica comprehends all ye substances that are employed either in Medicine or Diet. The Pharmaceutical branch hath generally been esteemed the whole that belongs to this subject; but the dietetical is certainly comprehended with great propriety; as the cure of diseases often depends as much on a proper regulation of diet, as on a judicious administration of remedies. The Authors that who have treated on this subject & by whom we may be assisted in our enquiries are: Lewis's Materia Medica & new dispensatory. These two very useful books, scarcely deserve to be called a proper system of Materia Medica. He follows the alphabetical order; by wh means his subject is so broken & interrupted yt it is impossible for ye reader to follow him regularly through his book; & he is therefore only fit for occasional consultations. Geoffroy hath divided the substances as obtained from the 3 kingdoms of Nature & the vegetable he again subdivides according to ye parts of ye plant ~~made~~ viz eg. Roots, Barks, Herbs &c. but when he comes to treat of ye individuals he is liable to ye same objections with ye author of ye new dispensatory. You are to observe that the 2 first Volumes of his Works are preferable to any of the others; as those were printed under his own inspection; whereas the others were published after his decease & therefore fall short and are in many respects inaccurate & even contrary to the real sentiments of the Author

In Dr Cullen's Materia Medica you will find an account of the Authors who have treated on this Subject & the merits of each book. For our present purpose the new edition of Cullen's Materia Medica will answer every intention

Linnaeus hath followed ye Botanical order in describing the virtues of the substances belonging to the materia medica. And tho it is true that plants of the same order & genus frequently correspond in medicinal qualities; this however is not so universal as to afford a proper foundation for to arrange the different medicinal substances. — Cartheuser's plan is better & less exceptionable than any of ye former. — He ranks the medicines according to ye sensible qualities; by which method he connects a number of substances that have a relation to each other & are found to correspond in medicinal virtues. But as this plan is too contracted to answer in every instance he hath in many places been obliged to arrange them according to the indications they answer in the cure of diseases. This is also the method which ye celebrated Newman followed. But there is no question but what Cartheuser deserves ye preference, as he distributes ye med. according to ye Indications they serve in ye cure of diseases & thence infers their usefulness. This is ye plan which Dr. Cullen hath in some measure adopted of whose Lectures have been lately published. —

Cullen's plan, which is ye same with ye which I shall pursue in this course, appears to me to have all ye advantages of ye former Authors & yet is not liable to their exceptions. — Here the Medicines are distributed according to the Indications they are proper to answer; & from thence their utility in ye various diseases is inferred & established

By possessing Cullen's Materia Medica & his Practice of Physick you will have two most useful books for these Lectures. In the latter you have the history of diseases delivered in the most perfect manner, & by consulting & attending to his description of diseases & method of treatment, with ye. virtues & uses of Medicines that will be pointed out in ye. course of these Lectures, you cannot but derive considerable advantage from following the method now recommended to you.

* I am ~~lately~~ informed that a new edition of this book is ~~lately~~ about being published, under Dr Cullen's own inspection: I have not yet had an opportunity of seeing ~~the~~ it; ~~but I have~~ I have no doubt of its superior excellence, & that it will be equal to any thing that hath ever been wrote on this or any other branch of Medicine. No Student or practitioner of Medicine ought therefore to be without it —

With regard to the merits of this performance it is evident that Dr. Cullen ~~had no hand~~ was not at all concerned in the publication, & therefore it is by no means to be attributed to him. It appears to have been printed from ye imperfect notes of some persons who ~~had heard~~ attended his lectures on this subject. It is undoubtedly much inferior to what might be expected from ye pen of so ingenious a Man & successful practitioner. We were indeed to be wished that he would substitute something worthy of himself in the room of this bastard. Upon perusing it you will ~~perceive~~ find it in many places obscure & frequently defective; it is however no more than doing Justice to this book, to say it exceeds most if not all ye former Writings on this subject & I would recommend it to you by all means to make use of it untill something more perfect upon this plan is introduced. # It is particularly useful to those who attend these lectures as the ~~subject of my lectures is~~ plan of them is entirely ~~—~~ the same ~~plan~~ with that observed in this Book. And as ~~I am in my former courses of lectures~~ I should be ~~was seldom always~~ under ye necessity of taking up a great deal of time in explanations & general reflections ~~because~~ if a book of this kind ~~was~~ were not ~~then~~ to be had: I shall ~~now endeavour~~ without any inconvenience to you contract that part of my course into very narrow Limits and employ more of our time in ~~applying the~~ making such applications of the materia medica to the practice of physick as ye nature of ye subject will admit, without making encroachments on ye province of anoth

In Imitation of the plan laid down by Dr. Cullen we divide medicinal substances under 3 general heads; corresponding to ye division of the human body into the simple fibre, the moving fibre, & fluids: Under the first head we rank all those substances who act immediately on the simple fibre under ye second, those whose action is intended on the moving fibre or solids Viz. & under ye 3 head, we place such remedies as have the fluids for their object. These 3 general divisions are again subdivided into classes, ~~adapted to answer~~ comprehending substances of similar Virtues, adapted to answer particular indications. I must however observe that the general arrangement or division is artificial & arbitrary & merely calculated to relieve the memory. For instance we rank under the first head of Medicines, ~~which~~ Astringents; but the action of these is by no means confined to the simple fibre; on the contrary their principal action is on the moving fibre. This arrangement is however absolutely necessary, as it relieves the memory greatly, & at the same time comprehends Medicines of similar Virtues. It is of little consequence whether the general divisions are founded in Nature or not; provided the classifications are natural & adapted to the Indications for which they are designed. This is the case in our present plan, & you will therefore find that according to this arrangement, Medicines of similar Virtues will be ranked together, to the great ease as well as advantage of the Student

The first head that is offered to our consideration are the Nutrientia; ~~by~~ under which term we ~~include~~ comprehend such substances as are properly calculated for the nourishment of our body. They are divided into ye Vegetable & Animal; the former ~~must~~ will be first enquired into, as all Animals may be ~~ultimately~~ said to live ultimately on Vegetables. Vegetables are again subdivided into such as strictly speaking afford Nourishment: & those that are or may be employed for ye purposes of Medicine: Under ye former we ~~may~~ rank all such as are mild, insipid & inodorous, whereas the bitter, nauseous & odorous are improper ~~for~~ food for ye human species. — There is perhaps no Vegetable but what affords nourishment to some being or other; for we cannot suppose that any thing is created in vain. We know at least that some of ye rankest poysons to us are not only inoffensive but even grateful food to ~~other~~ some particular Animals; & some substances that are at least innocent to us are poysons to them. Thus for instance the ~~wild~~ hemlock is a ~~sure~~ certain poyson & was by ye Ancients used for that purpose; but it ~~gives~~ affords good nourishment to the horse; & on ye contrary Ground Ivy which to us is at least innocent, will destroy a horse if he eats it in any quantity. — Many Vegetables likewise that

an of an acrid nature may by boiling or roasting be rendered mild & will then serve for ye purpose of nourishment. such for instance is ye indian Turnep; while the ~~root~~ a plant of ye most acrid nature, may by roasting be rendered perfectly mild & palatable. The Cassada of ye Westindies is in its recent state ~~of very~~ a poisonous quality, but by proper preparation affords wholesome bread to the Inhabitants of that Country. Innumerable Instances of ye same kind occur every where; those I have mentioned are sufficient for our present purpose & to establish the rule that none but mild & bland substances are proper for Nourishment. Mustard, Cresses ~~&c.~~ with many other substances, particularly spices, are likewise used with our food; ~~but~~ not however with ye intention of giving nourishment, but to render ~~this~~ more palatable: these we shall treat of under ye head of Condiments. But before we proceed any further I shall in a few Words enquire into the cause of Hunger. Were we to consult ~~the~~ our own feelings it ~~not~~ would not perhaps be a difficult matter to give the true cause in a very few Words; but Physicians are not always satisfied with what is evident to every person; ~~so~~ some refinement is necessary to shew their Ingenuity; & however paradox it may appear to you it is nevertheless true that very few Physiologists ~~not~~ have ~~agreed~~ been of ye same opinion with regard to the natural cause of hunger — The celebrated Dr. Hoffman attributes the cause of hunger to ye acid which ~~in~~

remains in ye stomach after ye former meal; and confirms his opinion by ye wellknown fact ye acids taken into the stomach will encrease or create an appetite. It does not however follow that because acids create an appetite, that it is always owing to an acid in ye stomach. For by vomits & ~~cathartics~~ purgatives the acid is frequently entirely carried out of ye stomach, ~~and~~ yet at ye same time they give an appetite. This fact alone is sufficient to refute this theory. —— Boerhaave, Haller and indeed Physicians in general have placed ye cause of hunger in ye attrition or friction of ye folds or plicæ of ye stomach against each other. They reason thus: When the stomach is empty ye sides are approximated ~~to each~~ & rub against each other, by which ye sensation of hunger is occasioned. But ye structure of ye stomach sufficiently refutes this opinion. ~~the figure of~~ This organ is of a round or conic form; which cannot be changed by its natural contraction or diminution, moreover the inner surface of ye stomach is so lined with mucus as sufficiently to defend the sides of it from friction or any other perceivable sensation, ~~so long at least as the~~ unless it indeed the stomach is in some measure disordered & ye mucus abraded. The cause of hunger may be sufficiently ~~ap~~ accounted for from ye emptiness of the stomach, without having recourse to any ~~other~~ suppositions whatever, and I am convinced that no person

in health cou wants nourishment, but when his stomach is
freed from ye load of a former meal. I am very well
aware of ye objection that hunger does not always take
place tho the stomach is empty; but then the person
can never be considered as enjoying full health. We sometimes
also see people in particular disorders constantly desirous
of food ~~the~~ from a preternatural hunger or rather craving;
but instances ~~that take place in~~ drawn from a diseased state of ye
body are never to be taken into consideration when ye ~~animal~~
~~functions~~ we enquire into ye manner how ye animal functions
are performed in a healthy state of the body. We shall
when we afterwards come to treat of Indigestions and other
disorders of the stomach have an opportunity of explaining
the causes to which a want of appetite is generally owing.
As our aliment is either taken from the Vegetable or Animal king-
dom, physicians have been long disputing, whether Vegetable or animal
diet was the proper food for us. We shall bestow a short time on
this Inquiry. — It cannot be denied, but that some Men & even whole
Nations, have in every age, subsisted solely on Vegetables. The fruit of ye
Date Tree furnishes ~~ye~~ a great part of Persia with their only food.
The Inhabitants of Arabia live on Fruit, Water & ye Milk of Goats. The
poorer people ~~who~~ inhabit the Cities of Cairo & Constantinople live

in general on raw Cucumbers. The Casada alone hath formerly supplied
ye. wild Inhabitants of ye. Western Islands with food, & most of ye.
people who dwell in the highlands of Scotland live & are robust
by feeding on Oats & Onions. I might give many more Instances
of Nations & particular men who live solely on a Vegetable diet; these
already recited are sufficient for our present purpose. It is how-
ever equally true that some Nations & those not fewer in number
live altogether on an animal diet. Some of ye. Inhabitants of
Africa feed solely on fish. In some of ye. northern climates, as Green-
Land & Iceland, where ye. Earth is incapable of producing Vegetables &
is covered almost ye. whole year with Snow, the people are nec-
essitated to subsist almost altogether on fish. The wandering Scythians
& the Tartars at this day, by all accounts, live altogether on ani-
mal food. The Patagonians dislike Bread & are fond of horseflesh.
Nay it is not long since a Nation hath been discovered who live
solely on the Shell fish which the Sea throws on the Shore at every
flood tide. The country they Inhabit is so very barren as not to
afford even Grass & therefore no living Animal besides Man is
to be found in it. The Inhabitants employ every Moment of
time during a whole Life in searching for food, & are but
one remove from the lowest of the animal creation. We
may therefore with great reason conclude that Man is by Nature
intended to eat all kinds of food, whether Vegetable or animal.
This is further evident if we consider the conformation & structure
of his teeth & Bowels. He hath both ye. Dentes laniarii & molares;
that is, ye. cutting teeth peculiar to carnivorous Animals; & ye.
Grinders which herbivorous Animals only are furnished with. Ani-
mals, ye. live on flesh have very short Intestines; for there is no

ence in their being long, as the food they live upon is of an animal
nature; but beasts that live on grass & herbs are furnished w. long
intestines as their food is to be converted into an animal nature
before it enters the blood & there is less danger from putrefaction
of it, being retained a longer time in the body; but it is observed
y. the intestines of y. human species are neither so long as the one or
so short as y. other; & this is a further proof y. Man was destined
to partake of both. We also in general perceive disadvantages to
attend the use of a Vegetable or animal food, which those are re-
lieved of who live on a mixed diet. Persons living on Vegetables are
commonly weak & relaxed & almost constantly subject to disorders
of y. Stomach & bowels. But those who indulge in animal food, are
subject to diseases of a more dangerous nature. Eruptions on y. skin,
leprosy, dysentery & malignant fevers are frequently brought on by
an immoderate use of animal diet. It conduces therefore to the
health of man that he should partake of both; & hence we find that
there are at this time few Nations, but have some species of
Grain to afford them bread; & the Inhabitants of Northern climates are
in general fondest of Vegetables, whilst ~~those who~~ the Inhabitants of
y. North have more on animal food, which is consistent with
both Reason & experience. Various condiments are likewise added
to our food to ~~make~~ render it more palatable & to correct any
bad effects y. may attend it. The most common of these are Salt
& Vinegar. It is an almost universal custom to add Salt to animal
food. It resists putrefaction & aby. sometime renders the food
more savory. But Sugar is perhaps one of the wholesomest condi-
ments. It is very nutritious, & it is highly probable that Vegetables
are more or less nourishing in proportion to y. quantity of saccharine

matter they contain; for Sugar may be extracted from every esculent plant. Sugar is also a very powerful antiseptic & useful in putrid diseases. Dr. Pringle is of opinion that ye reason why ye plague is not now so frequent in Europe as heretofore, is in a great measure to be ascribed to ye free use of Sugar. — From such a variety of substances however as we use in our daily food, Chyle is always produced. This milky fluid is taken up by Absorbent Vessels, created for ye purpose, & is by ye thoracic duct conveyed into ye subclavian vein & then changed into blood; from which afterwards all ye different humours of our body, ye differ so greatly from each other are again secreted. Bile, Saliva, Urine & Semen, beside many other humours, are secreted from ye blood by organs particularly adapted for this purpose; tho none of these humours are originally or formally present in ye blood, at least no more than ye Rum exists in Sugar or Spirits in Wheat or Rye. When ye Aliment is taken into the stomach it there undergoes a considerable change by being digested. This process of digestion hath been variously explained by different Authors. We shall first treat of ye fluids employed in digestion: these are Saliva, Gastric Liquor, Bile, & Pancreatic Juice. The Saliva, by experiments appears to be composed almost of Water with a small quantity of viscid matter, with ye nature of which we are but little acquainted: by heat it is resolved into the same principles as the animal substances in general; the only experiments which discover any thing of its nature were first made by Dr Pringle & after him by Macbride & others. these shew that Saliva added to animal & vegetable substances dispose them to fermentation & at the same time moderate this fermentation, so as to prevent its running into ye acetous or putrid. Another remarkable quality of the Saliva is ye disposition it hath to form concretions or calculi like those of the Urine. these often form in the ducts, particularly in those under the Tongue, & ye hard stony matter, which often adheres to ye Roots of ye Teeth is occasioned

of Saliva. Of the gastric Liquor we know still less, then of the
Bile, for it is difficult to obtain any of it in a pure state. The
only experiments of consequence on it are those by Mr. Reaumur,
which he tried upon the gastric Liquor of several birds: the occasion
of them were the disputes which at that time originated about y. man
in which digestion was performed; they are very ingenious & accurate.
The chemical physicians ascribed digestion to an active Solvent in
the Stomach which acted like aqua fortis; they even imagined it a very
strong Acid. The mechanical physicians attempted to explain digestion
on y. principles of mechanics: of this number were Bellini, Borelli & Pitcairne
they formed a calculation of y. strength of the Stomach by supposing
that it was a muscular organ, & by comparing it with the smaller
muscles; they estimated its force to be more than capable of grinding
any matter received into y. Stomach; this they thought was illustrated
& confirmed by y. example of some particular fowls, which plainly
dissolve their food by mechanical force. Mr. Reaumeur's experiments
show that neither side were quite in the right, nor perhaps altogether
wrong: it is evident from y. different kinds of food animals live upon,
that they require different digestive powers. We see from y. structure
of some fowls do grind the food, whilst in others again it is im-
possible that y. Stomach should act in this way. Mr. Reaumeur
made his first experiments on the Turkey whose stomach is very strong
& muscular: he made one of them swallow some small tubes of glass
to see whether they would resist the action of the stomach. These fowls
always swallow pebbles to assist y. Stomach in grinding the food
to powder; he soon found the tubes broken to pieces. He next
used short tubes of metal, which tho not broke, were squeezed flat,
he increased their thickness, till they were capable of resisting y. force
of y. Stomach, & enclosed in them grains of barley, closing the ends of
the tube in such a manner that y. grains could not get out, unless

dissolved. After they had remained in the Stomach some days, the grain were much swelled, but there was no appearance of Solution: they had suffered no change, which must have been the case in any other liquor equally warm; hence in this animal the gastric liquor does not act as a Solvent; but the Stomach acts by intended force. There no doubt but y. conversion of food into chyle depends afterwards on y. admixture of some fluid; but its digestion in y. Stomach depends entirely on mechanical force. Hunter tried many experiments on the Hawk, which hath no strong muscular Stomach, but a thin weak membrane, like that of y carnivorous animals. This bird was very convenient for experiments of this kind, as it is accustomed to throw up any indigestible matter lodged in its Stomach. The slightest tubes of thin Metal resisted the force of its Stomach, which y. pieces of flesh inclosed in them dissolved into a Mucus, without any bad smell, which easily diffused itself in Water. After trying different kinds of flesh & finding them to be all dissolved in this manner; he tried y Hardest bone of an Ox; but even these were dissolved in a very short time: he then tried ~~Sixteen full Measures~~ grains of barly, which he treated in y. same manner: they were thrown up without any appearance of Solution. Here we have an Instance of a curious Solvent, which dissolves Flesh & hard bones, but hath no action upon grain, or what is more remarkable on y. Stomach itself. From this however it is not to be inferred y. gastric Liquor in y. human Stomach is y. same as either that of y Hawk or Turkey; for Man, as we observed above, is not intended to live ~~solely~~ upon Vegetable or animal food; but upon a mixture of both. And y. changes y. Aliment undergoes in our Stomach may be readily explained from fermentation. This is of 3 kinds: The Vinous, the acetous & y. putrefactive; of the principles of these however, we are entirely ignorant. I can therefore only explain them to you by analogy. Of y. Vinous fermentation we have an Instance in Wine, Cyder & Beer. When this runs on farther & y. Liquor turns sour, we then call it

the acetous fermentation. The putrefactive fermentation occurs most frequently in animal substances & takes place when they corrupt & putrify. All kind of food undergoes these 3 species of fermentation. The first & second always take place in the stomach, & ye 3d occurs in the Intestines. It hath been generally denied that animal substances ever become acid in the stomach. Facts however demonstrate they do. For we perceive that persons who have lived on animal substances for several days, on vomiting, throw up an acid Liquor. And the stomach of carnivorous animals always affords an Acid. The Element then in the stomach is of an acescent nature, but this is afterwards corrected by ye Bile, when the food gets into ye Intestines; for by mixing Bile with Acids, the particular taste of both ingredients is destroyed, & a tertium quid or neutral, ye is neither bitter or sour, is produced. The same takes place, in regard to ye aliment, before the Chyle is separated from it. —

Bile. Various opinions have been entertained of ye Nature of this fluid; it is only since Dr. Ramsay, Professor of Natural History at Edinburgh, hath published his experiments, that we have a just Idea of it. — It hath been supposed to ~~[illegible]~~ be of a highly putrescent Nature, & to contain an alkaline Salt; by wh. qualities it corrects ye acescent tendency of our Aliment. Moreover it hath been said to possess a saponaceous quality or power of promoting ye Mixture of ye oily with ye watery parts of our food; but Ramsays experiments on ye bile of Animals, particularly ye Ox, from which indeed all ye ~~experiments~~ opinions

* of course it is an active stimulant; by this quality it undoubtedly expedes the passage of the aliment through the intestines, by increasing the peristaltic motion; for we find that in a Jaundice where y. free passage of y. bile into y. intestines is intercepted, the body becomes costive

concerning ye Nature of ye human bile, have been formed, shew
ye both ~~opinions~~ suppositions are equally erroneous. — For upon endea-
voring to mix bile & water by means of ye bile, he constantly
failed of success; it appeared indeed less saponaceous than
a solution of sugar, & this is greatly inferior to mucilage. That
it is not of a putrescent nature is evident from ye experiment
that it may be kept many years without becoming putrid;
it acquires indeed a strong nauseous smell, but never becomes putrid
or breeds insects. — By Dr. Ramsay's experiments it further
appears, that bile mixes with water & spt. of wine, without
much separation; that fossile acids precipitate ye whole of ye
green matter in which ye bitterness resides; ye four parts of
Vinegar mixed with five parts of bile, produced a sweet liquor
which did not coagulate milk, tho the least quantity of Vinegar
by itself does. — These experiments evidently show that bile cannot
be of an alkaline or putrescent nature. We further observe that
all animals whether carnivorous or herbivorous are furnished w.
bile; if this fluid were of an alkalescent nature, ~~however~~ it would
certainly be destruction to those animals that live altogether on
flesh or alkalescent food, however proper it might be for those who
live solely on vegetables. — We can explain its use on much
more rational principles, that will ~~explain~~ demonstrate its great usefulness,
without being liable to any of ye former exceptions. Bile is
a very strong bitter: * All bitters too resist fermentation of every kind
whether vinous or putrefactive: an example will illustrate this:

Hops are added to Beer to prevent its turning sour: Meat enclosed or wrapt up in Wormwood or any other bitter herb, is preserved from putrefaction: We administer ye Peruvian bark when too much acidity prevails in the stomach: It is ~~clearly~~ the ~~only~~ remedy on which we have ye greatest dependance in putrid fevers ~~& dangerous~~ — ~~[illegible]~~ Before I date I demonstrated to you that an acid fermentation takes place in the stomach, which verges towards the putrefactive when the Aliment gets into the Intestines, while ~~from~~ its bitterness, prevents the excess of either, & ~~thus~~ thus the body ~~while it continues in health~~ is guarded against diseases arising from either cause. — The pancreatic Juice, from ye experiments made on it, appears to be of ye same quality with ye Saliva, & probably serves to dilute ye bile & to modify the fermentation in ye Intestines. —

In my lecture yesterday I endeavoured to establish fermentation as the principal means ~~of~~ by which the ~~nourishment~~ aliment taken into the stomach was digested & converted into chyle — I am now however to take notice of a new opinion on this subject, which ~~plans~~ accounts for digestion from solution by the gastric fluid, which is thought to have the quality of converting the aliment into chyle without an intervening fermentation. A number of experiments made by Mr. Stephens at Edinburgh & published in a thesis on taking his doctor's degree ~~gave~~ are as a foundation for this theory. They were made on an hungarian soldier, who possessed the singular quality of digesting stony matter. — This wretch supported a miserable existence by swallowing stones for a trifling pecuniary gratification; and in such quantities ~~the~~ as to distend his stomach considerably & which on being pressed or struck ~~evidently~~ the friction of the stones against each other ~~were~~ was very perceptible. His excrements resembled mortar. — The result of a great number of experiments made on purpose to determine this important question ~~are~~ ~~is given at large in the Thesis~~ ~~I shall now~~ ~~is for~~ chiefly consists in the following particulars. — Various kinds of meat, dressed in different ways, were on different occasions & times, inclosed in

small tubes of silver & ivory, perforated w. holes or apertures to admit y. juices of y. stomach and swallowed by his servant. They were discharged out of the stomach by emetics, purgatives, & the natural evacuation by stool, at different periods of time, in order to observe the changes produced in the stomach. — It was found that according to the length of time the tubes had remained in y. organ, the substances inclosed were more or less dissolved; but no other change was produced in the remaining part. It was neither acid or putrid, & of course could not be in a state of fermentation. — Whether these experiments will be sufficient to establish this new theory ~~will~~ remains to be determined. — Of their accuracy & truth there can be no doubt; but whether Phenomena ~~that~~ observed in a being who differs so essentially from almost all the rest of his species, are to be considered as generally applicable, requires y. most serious consideration. That acidity is generally present in every healthy stomach; that this is increased by particular substances disposed to acescency, is most certain; & that some degree of fermentation is necessary to produce this acescency is equally true. — By these experiments it further appears that the flesh of young animals, & meat well done was of easier digestion than raw meat, & y. flesh of full grown animals. — This we shall hereafter find to be likewise against y. present established opinion — Vegetables of every kind were much longer dissolving than animal substances —

Vegetable aliment affords Nourishment only in proportion to the
Sugar or Oil which it contains, or as these two latter are blended
together & form ye farinaceous Matter. Those Vegetables therefore
which contain either Sugar or Oil ~~are~~ in ye greater quantity will always be the most
nourishing; provided the powers of ye stomach are sufficiently
adapted to digest them. Thus for Instance Rye is more nourishing
to the labourer than Wheat; provided the ~~stomach~~ fermentation
in the stomach is not carried too far; for as Rye is a sweeter
grain than Wheat it is much more apt to ~~to~~ undergo ye
putrefactive fermentation & to prove purgative. From this quality
it is recommended to those who are troubled with habitual
costiveness; & I have sometimes known Rye Meal & Milk relieve
that Complaint, ~~provided~~ if the person is not subject to hysterical
or hypochondriacal Complaints. Costiveness is a frequent symptom
of these Disorders, and is in these Cases owing to relaxation or
Laxity & not to rigidity: for ye former case then animal or
stimulating food will frequently give relief; but where the
costiveness is owing to rigidity or an increased peristaltic
motion, which is not seldom ye case, acescent vegetable food
will generally afford relief. In other Words: whenever a person is
subject to flatulencies & troubled with Indigestions & Costiveness
arising from this cause Vegetable nourishment of any kind almost
will tend to aggravate the Disorder; but in robust & plethoric
persons it will afford the surest relief

We ought therefore always well consider ye habit of ye patient & the particular constitution of his stomach before we ~~pronounce~~ give our opinion with regard to the propriety or impropriety of a particular food. Whenever we meet with a person subject to flatulencies & indigestions we may be morally certain that a vegetable diet will aggravate the disorder. For as the stomach already abounds with an acid & as all Vegetables are both subject to ye vinous & acetous fermentation, by which the acid in ye stomach, already predominant, is further augmented, the disorder must of course be greatly aggravated. Besides during the process of fermentation in ye stomach a large quantity of fixed air ~~or carbonic acid~~, by Authors generally called gas sylvestre, is generated which hath ye power of destroying ye contractility & mobility of ye moving fibre and tone of ye stomach, from which proceed ~~faintings~~ by some faintings, ~~Lethargy~~ Syncope, ~~Apoplexy~~ even & death. Thus I have ~~frequently~~ often known ~~delicate~~ Women of a tender & delicate constitution, who were subject to ye hysterick disorder, faint & even have convulsions from eating Apples & Milk, eating Water Melon or other fruit, Peas or Cabbage, or drinking new Beer, Cyder or indeed using any thing that was of an acescent Nature. Nothing indeed is more apt to affect these kind of Constitutions than ye eating either peas or Cabbage, which however are not of so acescent a nature as many other Vegetables from which they receive less Injury: We can only account for this from ye toughness & more firm texture, by which they are retained longer in ye stomach, and tho they do not in their

* Children are particularly liable to be affected in the most disagreeable & violent manner on taking such matters into the stomach as are indigestible & flatulent; e.g. Nuts, unripe or fruit, pastry &c — They are often thrown into Convulsions from this cause, & not seldom expire under them unless they are speedily relieved by the administration of an Emetic. I have likewise seen Young Men to all appearance in a fit of apoplexy from ye. same cause; & immediately relieved by giving an effectual emetic. The weak frequent pulse which also takes place in complaints of this nature sufficiently characterizes the disease & distinguishes it perfectly well from ye. proper Apoplexy in which a very different cause prevails & a different method of treatment required. —

* For there have been Instances of ye. Scurvy being produced in a very high degree where this ~~cause~~ circumstance was neglected.

own nature ~~of~~ so acrescent as many Vegitables, particularly fruits; yet
by remaining a much longer time in the stomach they will
produce a much stronger acid, evolve a greatly larger quantity
of fixed air & cause more grievous effects. That this is the
case appears evident from using split peas, as they are then
deprived of their outward firm shell & husk, & ~~may be~~ are not attended
with ye consequences that uniplit peas are.* The proper diet
therefore of persons subject to the hysteric & hypochondriac disease,
and to those who are troubled with flatulencies & indigestions, is
undoubtedly ~~the~~ animal food. One of the surest signs by which we
distinguish upon a weak stomach & may be assured of ye propriety of
an animal diet, is when ye contentions or what is belched up ~~will~~
burn ye stomach will flame in ye fire in ye same manner as oil. But however
~~animal~~ necessary animal food may be ~~[illegible]~~ in this case
it should always be accompanied with a sufficient quantity of
Vegetable diet.* The substances best calculated for ye purpose are bread
& ye potatoe. A Gentleman of my acquaintance is troubled with
so weak a stomach that he cannot even use bread without being
~~troubled~~ affected with flatulencies; but feels not ye least inconvenience upon
using even so large a quantity of ye potatoe. This however is a
singular case, & is only mentioned in this place to shew you ye
Potatoes very deservedly ~~make~~ constitute ye greater part of our Vegitable diet,
& that it will sometimes agree with ye stomach & particular
constitutions when even bread may be hurtful. — I cannot

*** surely ye Man who contributes in any shape to our ~~happiness~~ felicity is at least entitled to our ~~be~~ grateful acknowledgments.

agree in opinion w^th.

But tho I cannot ~~be of~~ Dr Cadogans ~~opinion~~ in this some other respects, I cannot help doing Justice to his performance, wch is replete wth good Sense, judicious reflections & excellent maxims for ye preservation of health ~~and such as~~ wch do great Honour to his understanding & abilities. Health is so immediately connected wth ye happiness of Mankind that proper rules for ye former may be said to insure ye latter. *** But to return to our subject

by any means subscribe to ~~Dr Cadogans~~ ye opinion Dr Cadogan entertains of bread & indeed of many other substances that he ~~treats~~ speaks of in his treatise on ye Gout. The bread which he made use of may for what I know have been attended with ye effects he ascribes to it: I do not mean to impeach either his Veracity or Candour; but I cannot by any means allow the experiments he made with bread but of ye body are conclusive or will bear the Inference he ~~means~~ draws from them. ~~Not~~ He says that bread macerated in water & placed before ye fire or in a degree of heat equal to that of ye human body will become acid. The same may be said of every Vegetable substance whether it be prepared by Nature or Art. Nay by late very accurate experiments it appears that meat of all kinds will in some measure undergo an acid fermentation before ~~they~~ it becomes putrescent. We also well know that ~~flesh~~ broths of ~~all kinds~~ every species will turn sour & not putrid. By Cadogans method of reasoning then we must reject not only all Vegetables but even ~~m~~ flesh broths & perhaps be scarcely indulged in ye use of Meat. It hath been too much ye case to draw conclusions from experiments made out of ye body & apply them to ye human frame, as if they must necessarily take place in ye body in ye same manner as ~~also~~ we observe them out of it. Thus it hath happened to Cadogan &c. out properly weighing ye consequences. His experiment either proves too much or nothing at all.* When bread or any other nourishment is taken, it is first chewed in ye Mouth, by which means it is intima

thoroughly mixed & blended with y. Saliva; in y. stomach it meets with y.
gastric liquor & in y. Intestines with y. bile & pancreatic Juice. All
these different fluids will at least check, if they do not prevent y.
tenous & acetous fermentation from going too far; and unless y.
Stomach abounds with too much acid, any bad consequences y.
might otherwise arise will be sufficiently guarded against. The
longer Bread is retained in the Mouth, y. more Saliva will
be mixed with it, and of course y. less disposition to ferment.
In weak Stomachs therefore & where there is an acid prevalent,
we should always advise our patients to use biscuit or bread
very hard baked. You can scarce conceive y. difference it will
make in y. health of y. patient. I have often seen Children ~~troubled~~
~~with Diarrhoea & pains of y. bowels~~ who were fed on pap made
of flour & milk or flour & water ~~too~~ grievously afflicted with diarrhoea
accompanied w. pains & gripings in y. bowels, relieved by making use of hard
biscuit instead of y. flour, without y. assistance of any other remedy.
I have likewise frequently observed that a person who could not retain
y. common baker's bread on his stomach, would easily retain
biscuit & not even feel the least Inconvenience from it; and some
times bread hard toasted would stay on y. stomach when almost
every other kind of nourishment was rejected by vomiting. But where
the Stomach is so greatly relaxed, there is as much caution necessary
in y. choice of drink as there is of food. Thus all kinds of fermenting
& even fermented Liquors must be strictly banished: nay I have observed

I must however here take Notice of some expts made by Dr. Smith a Gentleman of my acquaintance ~~Dr Smith~~ at Edinburgh, who is now a very considerable Practitioner at Birmingham in Eng. He ~~found~~ discovered y. a Solution of common salt was y. most considerable stimulant to y. aneurial fibres of any he ever applied. He tried his expts on frogs and found y. y. muscles of these animals might be excited to contraction by a Solution of common Salt when ~~with~~ other substance ~~seem~~ had y. least effect upon them. Blood

that even Madeira Wine would turn sour & disagree with y. patients
Stomach. The only drink ~~fit is~~ proper in these complaints is toast
Water with a little old ~~f~~ Rum or Spirits. When this is taken
in a very moderate quantity it will prove comfortable to y.
Stomach & y. nervous system; at the same time it checks y.
acetous fermentation. It is in a manner y. only remedy which
the celebrated Dr. Fothergill of London advises in Complaints of this
nature, and it seldome fails of giving relief. ~~However in order~~
~~to recover y. tone of y. stomach, after digestion~~. Various remedies however
have been thought of to recover y. tone of the Stomach, after digestion
& correct y. disposition for generating an acid. Dr Allen for this
purpose particularly recommends ~~the Spirit of Salt~~ a solution of
common salt in four times its quantity of Spring Water, to which
he adds a small ~~quantity~~ portion of y. Spirit of Salt so as to make
it taste somewhat sour. He indeed commends this Medicine
highly, but whether deservedly or not I am not able to judge as I
have never made a trial of it. I have indeed always found y.
common Elixir of Vitriol sufficient to answer the purpose,
when given twice or thrice a day from 20 to 30 drops each time
in a tumbler of Water. All y. Mineral Acids agree in this that they
create an appetite & resist fermentation of every kind; ~~the~~ viz. y. vinous,
acetous & putrid; so that where any of them are apprehended
any of these Acids whether it be y. Vitriolic, nitrous or muriatic
will in my opinion answer the purpose equally well; nor do
I find that either of them deserves a preference

we ~~might~~ rationally be led to conclude y.
from these ~~expts it could appear as if~~ y. muriatic acid & common salt
~~might~~ may have effects in stimulating y. stomach ~~&c~~ exciting ~~ap~~ appetite
& assisting digestion, w. no other Medicine would have. I shall however
~~take~~ embrace y. very first opportunity to satisfy myself of y. truth of it, and shall
let you know y. result; if y. fact turns out to hold good, we may consider
it as no small improvement in Medicine; for there are perhaps few
disorders so common as Indigestion, & depraved appetite & weak stomach
w. frequently baffles every attempt y. Physician can make to cure the
complaint radically. On this subject you cannot consult a better
author than Dr. Cullen on the disease which he terms the
Dyspepsia, and under which title he treats of indigestion, its
various causes, symptoms, effects & cure. — The following case, which
I am now treating, shows the usefulness of prescribing a proper
diet. — A Person who had been long affected with indigestion
flatulencies & y. various symptoms arising from that cause, for
which a Variety of Medicines had been prescribed, such as
bitters, chalybeates & mineral waters, but to little or no purpose
as only temporary relief was procured by them, after leaving
off every kind of Medicine & being restricted to live entirely
on fresh broths & boiled meats with very little vegetable
food, except bread, is almost entirely relieved of every
uneasy sensation in the stomach; digests y. food well,
& I am morally certain that by strictly adhering to this
regimen will be restored to perfect health. You are
to observe that in these complaints nothing is more pernicious
than butter and indeed every kind of fat or greasy substance
& it is upon the same principle that Pork, Duck, Goose

Having thus established the principle of Nourishment in Vegetables & ye principal disadvantages attending a Vegetable diet, we are in ye next place led to enquire into ye advantages resulting from it or ye cases in which its usefulness is established. — As in ye foregoing part of this Lecture it was observed that a Vegetable diet was improper when the stomach was relaxed & ye person was afflicted with Indigestion, flatulencies and too copious a generation of acid in that organ; it is but a natural consequence that wherever the reverse takes a place a Vegetable diet is not only proper but highly necessary. Thus wherever there is a disposition to putrescency, ye Dysentery, Scurvy, malignant & putrid fevers: or when an inflammatory Diathesis prevails, vegetables are indicated. For instance Persons who are threatened with spitting of blood or other Hæmorrhages, Consumptions, inflammatory fevers such as Pleurisies, Peripneumonies, Rheumatism &c. should avoid every thing that is stimulating or ye may quicken ye action of ye heart & arteries, and in consequence use animal food but sparingly and live in a great measure on a Vegetable & milk diet. It is observed that more persons die in England of Consumptions than in the same proportion of people in any part of ye World; and Physicians have been unanimous in this opinion that it was chiefly owing to the People of England living more on animal food than any other Nation. For Scotland & Ireland are nearly situated in ye same Latitude and agree very much in Climate so.

& all kind of water Fowl is particularly injurious in a weak & relaxed state of the stomach —

* A Vegetable diet is of the last importance in consumptive habits & is perhaps the only effectual cure in that disease. I have relieved several, who had all the Symptoms of an approaching consumption by recommending a vegetable diet & enjoining the total abstinence from every kind of animal food except milk, and without the use of any medicine whatever. — I have found the same good effects from vegetable diet in rheumatic complaints, and indeed found it the only certain, effectual & radical cure. —

England, yet the people of these Countries are not so subject to the Consumption. The Putrid disorders accompanied w. Petechia were common in London in Sydenham's time; but are now scarce ever heard of in that place: Dr. Pringle ascribes it solely to a free use of Veg: diet and that y. same time observes that forty times y. quantity of Vegetables is now used in that Metropolis to what there were 60 years ago. The cause of y. Dysentery hath long been ascribed to a too free use of Vegetables particularly fruits: an opinion as groundless as it is pregnant with dangerous consequences. For from this theory ripe fruit, the proper cure for y. Disorder, hath been absolutely forbid, tho the sick most earnestly request it. Lisfort in his advice to y. people, a book y. contains more candour, humanity & goodness than any book of equal size that ever was published, laments this unwarrantable prejudice. He gives several Instances of the advantage of using ripe fruits plentifully in this disorder: Amongst others he tells us of a whole family consisting of eleven persons y. were afflicted with y. Disorder; q. whereof recovered their health by y. free use of fruits, but y. Grandmother & a favourite child were both carried off and fell a Sacrifice to Ignorance & prejudice. He further tells us y. y. same Distemper had nearly destroyed a Swiss Regiment in Garrison in y. South of France; the Captains purchased the whole Crop of several Acres of Vineyard; there they

carried the sick Soldiers and gathered the Grapes for such as could not bear being carried into ye. Vineyard; those who were well eating nothing else: after this not one more died, nor were any more even attacked with ye. dysentery. It is not ye. Grape alone which produces these salutary effects: any ripe fruits ~~will~~ would answer the purpose; but we have a fruit in this Country that ~~for equals any of the others in this Disorder~~ appears to be in a peculiar manner calculated to relieve this disorder. I mean the Water Melon and experience convinces us that it is attended with the most happy effects. Dr. Hasselquist in his Travels to the Lect observes ye. after ye. Nile hath overflowed ye. greatest part of Egypt and again subsided, the whole country becomes an immense Marsh & from ye. number of Vegetables & dead Animals & quantity of all kinds of filth putrifying the air is infected with ye. Exhalations & ye. Inhabitants in general are affected with putrid fevers & Dysenteries. Their only remedy in this case is ye. Watermelon which they eat in ye. greatest quantities & drink ye. Juice of it, by which ~~all~~ the greater part recover in a short time & few or none die of the Disorders, wch. in other Countrys & where a diff.t method is pursued prove so very fatal. The Water Melon encreases ye. Secretions both by Stool & Urine, and at ye. same time supplys ye. body ~~wt~~ with a mild antiseptic fluid, by which it must certainly do more service than all ye. Cordials & Stimulants which are generally made use of

in these disorders to so little purpose. Dr. Hillary makes the ~~same~~ pretty much the same observation wth regard to ye treatment of ye yellow fever in the Westindies: he in a great measure abolishes the use of the Cardiac and other Medc wch Physicians extol so much for ye cure of that distemper, & trusts chiefly to acidulated & diluent drinks, wth which he assures us that he performed cures in very desperate cases. A Gentleman ~~in~~ lately in this place, but formerly Physician to ye naval Hospital at Halifax informed me that on ye return of ye fleet from a long cruize many of ye Seamen were sent on shore extremely ill of a putrid disorder. The Bark and every other Medicine generally recommended in diseases of this kind were tried to no purpose, for and notwithstanding their ~~utmost~~ Physicians exerted ~~themselves to their~~ their utmost abilities the greatest part of ye Men died, untill an inferior Officer of one of ye Ships, in all appearance in ye last stage of ye same disease begged he might be once more gratified with a draught of punch: his request was granted; he took off a full bowl at one draught, ~~and~~ which threw him into a gentle sweat; he mended from that time & was entirely recovered by frequently repeating ye same kind of drink. This method was afterwards pursued with the rest of the sick and scarce a Man perished under this Management. If any ~~Medicine~~ thing can be of service

* Somewhat analogous to this is ye method ye Troops of Germany use when afflicted with this Disease. For ye Dysentery is a Disorder ye particularly attends long encampments, especially if they are in a low marshy situation. The German Soldier trusts ye cure almost entirely to a mixture of Vinegar & Cream, of wch he drinks as much as he can obtain & is sadly disappointed in his expectation of being relieved of ye disorder.

¶ The Dysentery is also generally accompanied with, if it be not frequently owing to, a depraved state of ye bile; and nothing is found to have so sudden an effect on ye bile as recent acescent Vegetables, particularly fruits; and at ye same time that they correct & alter ye corrupted nature of ye bile, they stimulate ye Intestines, by wch ye offensive morbid matter lodged in ye Bowels is ~~[illegible]~~ speedily & totally evacuated & carried out of ye body. We have also Instances of chronic Dysentries, yt had resisted every remedy and baffled ye most experienced Physicians, being radically ~~cured~~ cured, ~~by~~ & solely by ye free use of ripe fruit

where the putrescent diathesis hath infected both ye. Solids & fluids of
the body, it must certainly be such a remedy as will gently evacuate
the degenerated parts of our fluids and at ye. same time supply
the body with a mild antiputrescent nourishment.* A few doses
of ye. bark or indeed any other medicine are scarce adequate to the
disorder, and very frequently ye. stomach will immediately reject them
by vomiting, so that however useful they might otherwise be, they
must be given on that account. But it seldom happens that ripe
fruits or acidulated drinks are offensive to ye. stomach; on the con-
trary they ~~seem~~ are very agreeable and in general greatly desired by
the patients.* I told you just now that fruits never occasion
a Dysentery, but were on ye. contrary pointed out both by reason &
experience as the proper cure of ye. disorder; they ~~are~~ however frequently
occasion Colics, Diarrhoeas & ye. Cholera morbus. They occasion
a Cholic by fermenting in the stomach & at ye. same time ~~making which~~ & generating ~~an great~~
a quantity of fixed air; ~~from~~ by which ye. stomach ~~often~~ & Abdomen often
distended ~~swell~~ to an immoderate ~~degree~~ size with great pain & spasmodic
contractions in particular parts & unless proper assistance is
readily given, fainting & convulsions succeed which soon terminate
in death. ~~A case of this kind happened lev. last summer.~~ This was ye. case of a young
~~lady~~ person of a delicate constitution, subject to flatulencies & Colics, who after eating

* The following case however is an exception. — I was called to visit a Gentleman who about 6 hours before I saw him had been seized with a violent pain in his stomach sometime drinking a cup of butternilk which had stood some night & was rather sour. — I immediately had recourse to opiates, volatile salt, fomentations to the abdomen & finally had him placed several times in a warm bath; but all to no manner of purpose; for it neither relieved his pain or abated ye sickness & vomiting, which were incessant, and he died in less than twelve hours after I first saw him & from ye coldness of his extremities & feeble frequent pulse I am persuaded a mortification of the stomach took place, which rendered every effort ineffectual —

ating a considerable quantity of Cherries was in y. Night seized with
ain in ~~the~~ y. stomach & an inclination to vomit. ~~The~~ the stomach &
lbdomen were distended to an immense size ~~and of course~~ attended
with great pain and notwithstanding every assistance ~~was~~ was offered he
expired the following Evening. These cases indeed always terminate
suddenly; the Medicine which I have found to give y. most speedy
lief is y. Sol. alkali. A drachm or more of y. Sals C.C. dissolved
in four or 6 Ounces of Water with some drops of a carminative
& in case of great pain a proper quantity of L. L. may be added
of which a table spoonful or more is to be taken every hour
y. necessary is generally attended with success. The Sal. C.C. acts
not only as an antispasmodic, but likewise as a stimulant & at
the same time corrects or rather neutralizes the acid in the
stomach ~~by which means~~ & therefore seems alone to answer
every Indication to be adapted to ~~every~~ Symptom that accompanies
this Disorder. I have ~~indeed not~~ had many opportunities of
employing it in cases of this kind; ~~but when I had~~ I always
found it effectually ~~to~~ in removing the disorder.* ~~It is a~~ The vulgar
custom of eating Cheese with fruit is ~~a~~ very judicious; for as
cheese is of animal Nature and old Cheese particularly ~~hath a~~
~~ten~~ tends to putrescency it is well calculated to obviate y. bad
effects of y. acetous fermentation which would be occasioned by
eating ~~a large q.~~ fruit in any considerable quantity.

and secretion. For the ye cause of thirst is in a great measure
local & confined to ~~ye part~~ the palate; and applications to ye part
generally remove it. We shall next consider ye drinks y^t are proper
in particular ~~kinds~~ fevers. In all general inflammatory fevers acidu-
lated drinks seem ye proper; but whether acid drinks are useful
in topical inflammations particularly in ye Pleurisy & Peripneumony
is a doubtful matter. These disorders are always accompanied with
Cough, and Physicians have ~~always~~ been unanimous in opinion that all
kinds of Acids are hurtful in Disorders of ye breast & Lungs by
all augmenting & aggravating the Cough. From this Motive I have always
~~been~~ declined advising acidulated drinks however proper in other respects,
and generally ordered a Tisan of Barley Water in which some liquorice
Root & ~~Plums~~ Raisins or Prunes have been boiled. This affords indeed
an opulent drink and will generally keep ye body open; which is one
of ye principal curative Indications in this disorder. Acidulated
drinks are likewise highly proper in all kinds of putrid ~~disorders~~ fevers
ye Dysentery, in bilious Vomitings & indeed wherever there is a dispo-
sition to putrescency.* ~~In the Nervous fever~~ they do not appear
to be attended with equally good effects in the nervous fever. This is
always accompanied with a Debility of ye Stomach & indeed of ye whole
System; in great ~~weight & oppression~~ at ye breast arising from
the same cause; and as Vegetable acids ~~have~~ acidulated drinks a tendency of still further
debilitating the Stomach and encreasing this oppression they are
~~indeed~~ extremely improper. Nay I have often neutral mixtures &
neutral salts taken given wth a View of opening ye Bowels add greatly to

the disorder, by occasioning such flatulencies & oppression as ~~were to~~
throw y. patient into faintings ~~by~~ w. ~~most~~ in imminent danger of his
life. In this fever then we should ~~give~~ order y. patient such drinks
as are moderately stimulating & comfortable to the Nerves. e. g. An
infusion of Balm, Sage or Lavender; Whey & in y. ~~last~~ advanced stage of
y. disorder Mustard whey is often attended w. happy effects. Acidulated
drinks ~~&c~~ Acids in general are also improper to persons recovering
~~out~~ from an Intermittent. During the cold fit of an Intermittent
y. patient ~~must~~ ought to refrain as much as possible from all manner of drink;
& during the hot fit & even Intermissions ~~Camomile an Infusion~~
of Camomile or Centaury is y. proper drink; but our patients freqly
require something more grateful & we may during y. hot fit
allow them acidulated drinks; but at no other time unless indeed
the disorder is accompanied w. bilious symptoms. For every thing
that hath a tendency to refrigerate & debilitate y. Stomach will be
productive from this disorder occasion ~~a~~ y. return of it. Another
question agitated among st Physicians is whether Drink in fevers ought
to be taken warm or cold. Some are for rejecting cold drink altogether
whilst others commend them very highly. In all topical inflam-
mations & indeed in inflamatory fevers in general cold drinks
are all ways to be avoided; but in low nervous & remittent fevers they
may be used with the greatest safety. This is evident from y.
~~example~~ practice of y. Italian Physicians who in y. low & remittent fevers w. prevail
in that Country not only order cold water, but even have it cooled
in the Summer w. Ice, and not only without any dread of
bad consequences, but even w. y. most salutary ~~consequences~~ effects.

Nothing certainly appears to be more grateful to people labouring under these disorders than a draught of cold water, yet ~~it is to~~ prejudice ~~often~~ in the physician often deprives them of this gratification. Cool drinks are indeed so far from being attended w.ith any disadvantage in these cases, that they are on y.e contrary more proper than ~~hot~~ warm drinks w.ch still further relax & debilitate the stomach. In inflammatory fevers, when the action of y.e heart & arteries is too violent & the pulse too high, cold drinks would be highly improper; but when there is a debility of the Vis Vitæ & the pulse is small & slow, they ought to be given in preference to warm liquids. We ought also to observe & give persons in y.e Nervous fever drink frequently tho they do not demand it; for this disorder is generally accompanied w.ith such a degree of delirium & insensibility that the patient is little anxious about ~~any~~ his own concerns.

In this Country & indeed every part of y.e British America a custom prevails of drinking punch in large quantities, ~~before~~ both in the Morning & Evening & indeed at all times of y.e day in hot Weather. If you recollect what I said of y.e disadvantages attending y.e too free use of fruit, you will not be at a loss to know that it is a pernicious custom: the acid debilitates y.e stomach, disposes to flatulencies, enervates the System and the spirits of rum contribute by slow but equally sure steps to y.e same end; the consequence of which is y.e Gout in y.e extremities in y.e early periods of life, and in ~~ad~~ y.e Stomach & head in an advanced age. The ~~generality of~~ Inhabitants of y.e West Indies are an evident proof of this: the Men there ~~are generally carried off before they arrive at~~ scarce ever enjoy a good old age; whilst y.e Women who are remarkable

In my last Lecture I treated of Drink & its of its propriety or improp-
ety in fevers. I then neglected to speak of its use in Dropsys, and
therefore now to repair that omission. The Dropsy is always accom-
panied w.th unsupportable thirst, &c. no drink will quench, and
appears to be principally owing to a diminished secretion of y.e
Saliva & spasmodic constriction of y.e Vessels in y.e Mouth & fauces.
It is evident, that as there is too much fluid in y.e body w.th
~~y.e~~ administration of all the secretions, drink by increasing y.e quantity
of fluid must be pernicious. I know a Gentleman, now a Surgeon
of eminence in London, who was relieved of y.e Dropsy by a
most obstinate abstinence from all kind of Drink. His abdomen
was so much distended w.th water that it was bursting, a fistula had
already taken place, of w.ch he bears y.e cicatrix to this day, and
by abstaining altogether from drink he recovered w.th only y.e use of
Medicine: he constantly kept a Plumb, Tamarind or some other
substance of y.e kind in his Mouth, sometimes moistened w.th a
little Wine, to take off y.e almost insupportable dryness; but
no watery Liquor passed his tongue. We have instances again
of persons by indulging in very large draughts of water recovering
from y.e disorder; but this only happens when y.e Water so dilu-
ates y.e Vessels y.t they are excited to violent Contractions occasioning
vomiting, purging & great discharges by Urine, & therefore not
owing to y.e liquid but as it acts ~~im~~mediately by stimulating,
hence always very precarious & fatal unless it is immediately
attended w.th this effect

for Temperance, ~~frequen~~ generally enjoy ~~an~~ great share of health & a long life.

Condimenta.

Condiments are such substances as are taken wth. our food either to correct any bad tendency it may have, or to render it more palatable & agreeable to y^e. stomach. They are of different kinds. 1. Aromata; wch. are certain acrid substances y^t. we take wth. our food to render it more palatable. These are ~~to~~ in y^e. Indies: Cinnamon, Cloves, Nutmegs, Mace, Pimento &c. In y^e. colder climates & analogous to y^e. former are: Anise, Coriander, Fennel, Caraway, y^e. sweet herbs &c. All these stimulate y^e. stomach promote y^e. peristaltic motion; are antispasmodic by taking off Spasms arising from y^e. flatulency of our food. They are therefore properly employed wth. our Veg: Aliment, & then they stimulate y^e. stomach promote digestion, by wch. they correct the tendency to acescency & prevent flatulencies. They are on this account particularly calculated for y^e. Countrys of wch. they are the produce; for as the Inhabitants live chiefly on Rice, Milk, y^e. Date & other acescent Vegetables, they have occasion for something warm & stimulating to prevent y^e. effects of y^e. acid fermentation. But in cold Countrys where we live much on animal food they are altogether improper, only encreasing y^e. stimulus of fever wch. are already too great. ~~Food~~ Animal food is sufficiently stimulating & savoury without y^e. assistance of this kind of Aromatics; which have undoubtedly a pernicious tendency when used freely with an animal diet.

If this persons who live high in their youth afford us striking examples.
For when they arrive at ye. period of life when ye. Stomach &
indeed very partofy. System becomes less sensible to Impressions
ye. Irritability naturally declines, they are troubled wd. flatulencies
indigestions, costiveness from wd. arise obstructions in ye. Viscera
particularly ye. liver wd. an innumerable Train of evils. For hot
stimulating food is attended wd. same effects ye. stimulating Medi-
ne. When we first use them they will indeed produce considera-
ble effects; but in ye. end they will destroy the tone of ye. Stomach
& System in general. But Stimulating food is particularly improper
for persons in the prime of life, when ye. action of ye. different organs is
sufficiently high; and if it is to be used at all it should be in ye.
decline of Life, when ye. Vigour & activity begins to abate. With acescent
Vegetable food aromatics are very proper as they correct ye. refrigerating
quality of ye. Vegetables & at ye. same time render it more agreeable.
The proper Condiments for animal food are ye. different kinds
of Cresses wd. are produced in ye. colder climates; e.g. Radish, Mustard
Horseradish &c. These give taste to insipid food, stimulating
ye. Stomach & System in general by which they prove diuretic &
diaphoretic and evacuate ye. degenerating parts of our fluids. The
same be said of Leeks, Onion & Garlick wd. are therefore likewise
used wd. propriety as condiments for animal food

But the Condiments most generally & universally used with our food are Salt, Vinegar & Sugar; of these Salt is perhaps ye one most universally employed both in our vegetable & animal diet: it is ye most hoped of ye Condiments & least apt to palle. It is said to be antiseptic & to resist putrefaction; but ~~we find the~~ it is poison to those animals who feed altogether on flesh, & salubrious to those who live only upon grass & herbage, where antiseptics are neither necessary or useful; whilst in ye former they should seem to be much wanted. It therefore appears to be particularly proper in a vegetable diet: it stimulates ye stomach excites ye appetite & promotes the secretion of ye Saliva & gastric liquor. Animal food preserved by salt, is rendered hard & firm, consequently of more difficult digestion & on ye account as well as for other reasons, predispose to ye scurvy and other disorders. But it is useful & persons afflicted in the Worms. It is found ye when Sheep are troubled in a disorder called ye Rot, in is frequently ~~accompanied~~ with & perhaps owing to Worms in ye Liver, if they be kept on a strong solution of Salt in water it will generally relieve ye disorder; & if Sheep have a proper quantity of Salt given them from time to time; they will not be affected in this disorder. It is on this account that some Husbandmen put pieces of Rock Salt (Sal fossile) into ye Sheepfold, for ye Sheep to lick of it at pleasure. Whether this first gave Physicians ye Idea of prescribing Salt meat for ye Worms is immaterial; but true it is that it is frequently attended with very good effects, particularly against ye Tapeworm, in is often dislodged in ye greatest difficulty. In this case Dr Rosen, first Physician to ye King of Sweden, a Man

Common Salt hath lately been introduced in this place and recommended as a specifick in spitting & vomiting of blood. The method to use it, is for the patient to take one or two table spoonfuls in the course of a day, either dry which is considered the best method, or mixed with water. Several Practitioners in this city have assured me of its good effects and I have to given it a fair trial in four cases. In one case it was ineffectual; but in the other three the disorder was relieved; I cannot however be certain that the effect was produced by the salt as other remedies were at the same time employed, which in all probability contributed greatly to the cure. — But in the two following cases I attribute the cure entirely to the Salt. On the 21 February 1783. I was desired to visit a Gentleman about 32 years of age, whom I found spitting up clear blood from his Lungs, without any effort of coughing, but a trifling hecking cough or rather hawking — He had been that morning seized with the complaint for the first time in his life. He was free from pain, or any uneasy sensation in his breast, and could not assign any cause for his disorder, except that some days before he had

of the first Repute for medical knowledge, always orders his patients who are afflicted with y. Tapeworm before they take any medicine to live for a Week or fortnight on salted meats, and particularly to take a bit of salt fleuk or fish before Supper, w.out drinking for some time after it; by this means y. Worms are deprived of nourishment, but likewise extremely disliked by y. Salted provisions & yield much sooner to y. Medicines y. are calculated to expel them. This method is not only confirmed by experience but is extremely rational & judicious, for Salt is one of y. substances that will soonest kill worms out of y. body, if ever so little comes in contact with y. worm —

Vinegar gives a grateful taste to y. Aliment, stimulates y. Stomach & excites y. appetite. It is particularly calculated as a condiment for animal food where it corrects y. tendency to putrefaction; pure Vinegar is likewise useful w.th Vegetables, by determining them to undergo y. acetous fermentation, w.out injuriously entering the vinous; for it is during y. vinous fermentation that y. fixed air is generated, w.h ~~generally~~ occasions flatulencies and other symptoms more troublesome & distressing than any y. arise merely from too much acid in the Stomach. We should however always endeavour to have our Vinegar pure & unmixed; it does not seldom happen y. a quantity of saccharine & other foreign matters ~~are~~ remain in y. Vinegar, w.h are liable to a new fermentation in y. Stomach, which pure Vinegar is not, and will produce all y. Inconveniencies y. unfermented vegetable juices are liable to occasion in the Stomach. We shall another opportunity of speaking of y. advantages & disadvantages of fluids in general; when I shall treat more particularly of

crossed a brook on horseback which proved deeper than he expected, so that his horse had to swim a small distance & he got wet up to his middle; but did not feel himself much affected by it. As his pulse was neither hard or full, I ~~ordered~~ desired him to lose ~~no more than~~ 12 ounces of blood & orderd him two take two scruples of glauber Salt every 2 hours — This as I intended gently his bowels gently & in the evening the spitting had abated considerably; next morning I found he continued better & I therefore repeated the powders & enjoined him to persevere in living ~~too~~ on y. thin spare diet I had recommended to him the day before, & likewise to continue in the use of barley drink. But on y. 23d. in the morning I found his disorder had returned on him with as much violence as at first, tho he had complied strictly with my prescriptions: I therefore ordered him to lose about 6 ounces more of blood; and prescribed the common Salt for him in doses of ℥ij to be repeated every 2 hours. — In the evening I found him entirely free from any discharge of blood; however ~~just~~ advised him to persevere in y. use of the Salt for a day or two, and he ~~hath~~ never had the least return of his complaint — The other is the case of a Lady about 50 years of age whom I was desired to visit on the 22d. April 1763 —

Vinegar; at present we shall say no more on this head but proceed to

Sugar. I told you y. this was one of y. chief Ingredients & indeed y. principle of Nourishment in vegetable aliment; I am now however to speak of it as a condiment; and y. reason why we do not employ it oftener & more in y. intention, is its falling y. stomach & appetite when taken repeatedly & in large quantities. As it is of an antiseptic nature & liable to y. acetous fermentation in y. stomach it appears particularly calculated to accompany animal food. It is better for this purpose than common salt as it is not liable to a decomposition & instead of hardening renders y. meat more soluble. A proof of this is easily demonstrated in our salted meats particularly bacon, in w. we find a great difference frequently in solubility and succulency which is entirely owing to y. mode of preserving it; for those who use a small quantity of sugar w. y. pickle for preserving their meat, will have it more juicy & tender than those who make use of salt without y. addition of sugar. It is observed y. Hogs feeding on y. Cane in y. Westindies will afford much tender meat than those who live on other substances. — In the northern Countrys of Europe the people freqly use sweet sauces w. their meats, and in some parts y. people of New England have a custom analogous to this in using Molasses w. their salt fish & salt pork, particularly & chiefly in the Winter; for in y. Summer it neither necessary nor proper. It hath however been often debated whether sugar was wholesome or not: From what hath been just said & from y. principles ~~form~~ laid down & established in a former

On examination I found she had been all the preceding winter & spring ~~much troubled with~~ subject to a Cold, attended with a troublesome hacking cough, uneasiness in the breast & low fever; but on that day was first seized with a discharge of pure blood from her lungs. — As she was of a weak constitution & never could bear bleeding well, I ordered only eight ounces of blood to be taken from her, & desired her to take half a drachm of glauber salt every 2 hours to move her bowels gently. — Next morning I found the medicine had produced the desired ~~the~~ effect & that her complaint had not encreased upon her; but in the afternoon it returned with violence and was at the same time attended with faintings that were truly alarming — I therefore ordered a blister to be applied to the upper part of each Arm, and advised her to take from half to a whole teaspoonful of finely powdered Salt as often as her Stomach would bear it. It was with difficulty that she retained it on her stomach, as it never failed to excite a nausea & frequently a vomiting; which induced me to order ~~in~~ a strong solution in water to be made of it, & for her to take it as often, & as much at a time, as she possibly could. — It still continued to nauseate her stomach, as did indeed every thing else she took, &

Lectures, the Answer is easy. It is evident that as Sugar is liable to undergo both ye. vinous & lactous fermentation it must be prejudicial to those who are troubled wth. flatulencies, indigestions & too much acid in ye. stomach, by encreasing ye. acid & further debilitating & relaxing ye. organs. On the contrary when there is too much ~~acid~~ rigidity & a disposition to putrescency it is extremely useful & proper. It is certain that since ye. use of Sugar hath become very frequent & common, many Disorders accompanied wth. putrescency, that were formerly annually epidemic in London & other places, are now scarce known or heard of. Sugar hath however been accused of occasioning particular Disorders & aggravating others. It has been very generally accused of occasioning ye. decay of the teeth. But it is unaccountable how this should happen. It hath been said ye. by sticking to ye. teeth it there ferments becomes acid & corrodes them. How so soluble a substance as Sugar should remain there long enough to undergo a fermentation, for wh. purpose even it must first dissolve, is to me inexplicable; but allowing it did, how could an acid corrode them when we find Acids frequently employed to preserve the gums & teeth; nay whole Nations live in a great measure altogether on Raisins, wh. are of a much more acrid nature than Sugar & yet those people are not more subject to Disorders of ye. teeth, than others who scarce ever taste Sweets. It is much more probable that drinking hot Teas, Coffee & a freq. use of Spirits, by debilitating & enervating ye. System in general, also affect ye. teeth & occasion their early Loss

I attribute the early decay of teeth in this country principally to two causes. — The one the climate I think may be justly accused of. There is perhaps no country in which the vicissitudes of the weather are greater or more sudden — These violent & sudden changes are apt to produce colds & particularly rheumatic affections in the head & face, which cannot fail of affecting the teeth & in time bringing on their decay. — The other cause chiefly operates in the fair sex, who are in general much afflicted with indigestions & disorders of the stomach, that readily affect the teeth, and it is remarked by most strangers that come to this country, that the women are very much affected with decayed teeth. —

Sugar hath also been very generally accused if not only occasioning, but particularly aggravating all disorders y. owe their origin to Worms. But we shall find this opinion void of y. least foundation in truth if we consider that Sugar applyed to a Worm out of y. body will kill him almost instantaneously. It is a universal observation that Children or grown persons troubled with Worms always find themselves ill at ease upon using Sugar or sweetmeats. This hath been accounted for from a particular fondness that y. Worms have for these substances; and y. they were moving forwards in order to get at them the sooner; tho when Milk or other substances, y. proper food for ~~the~~ Worms, is taken no such effect is observed. ~~It is that altogether~~ y. reverse takes altogether place in this instance, and the Worms are disturbed by y. Sugar, w. is to them poyson & endeavour to avoid it upon y. principle y. every creature ~~flies~~ avoids danger. The Patient frequently ~~feels~~ endures y. most excruciating torments from it, even to raving convulsions; w. is frequently indeed y. case when any Medicine or substance is given w. an intention of destroying & killing these Vermin. For whilst the Worm is at rest in y. Bowels y. patient hath no sensation of pain ~~from them~~; but whenever it moves & crawls along y. tender & very irritable surface of y. Intestines he must endure ~~the~~ great torments & even be thrown into convulsions by it. From what hath however been now said it is evident that Sugar can neither contribute to y. generation or augmentation of Worms in y. body; but that it hath a quite contrary

There is no doubt but what a considerable change hath taken place in the nature of ye diseases with which Mankind is afflicted since the use of Sugar & some other substances have been introduced into general use. If we consult the writings of the Physicians in the last Century, & even in the beginning of the present, we find the Diseases that prevailed most in those days ~~who~~ were either highly inflammatory or putrid. We know that they lived in those days much more on meat & strong food than we do now, & from ~~that~~ their mode of life were exposed to those violent diseases. But since Tea & Coffee with Sugar have been introduced & constitute a very considerable part of our nourishment, those diseases have certainly greatly diminished, and in the room of them the human constitution hath become liable to ye different species of Nervous disorders, ~~with~~ which ~~our Ancestors~~ were scarcely known to our Ancestors. There however no doubt but we have benefited much by ye exchange as Nervous disorders have not in general that fatal tendency which putrid & inflammatory fevers attended. We are besides entirely relieved from the Leprosy, one of the most disgusting & dreadful diseases to which ye human frame is liable, & for which they were under the necessity in those days of erecting Lazarettos or Hospitals in order to confine Lepers & cut them off from all communication with

tendency; it is highly probable y. the chief reason why people are not so much troubled with Worms now as they were formerly is solely to be ascribed to y. more frequent use of Sugar. The finer Sugar is the less is it subject to y. vinous & acetous fermentation in y Stomach; coarse sugar is more fermentable occasions a greater quantity of acid & frequently proves laxative; therefore y. bad qualities of sugar are more conspicuous in coarse than fine sugar. It is a vulgar error that y. ~~Lump sugar~~ Quicklime employed in y. refining of sugar enters into y. composition of it; by w. many are deterred from using it, lest y. ~~quicklime~~ lime might be attended w. disadvantages. No particle of y. Lime however enters into y. composition; on y. contrary the finer y. Sugar is, the better adapted for our use; possessing all y. good qualities of sugar sans y. noxious ones that accompany y. use of coarse & brown Sugar. Vegetable Aliment ~~hath all~~ preserved by Sugar hath all y. qualities of sugar; for y. substances generally preserved are macerated so long in water until y. Virtues are extracted & they become insipid; when y. saccharine matter is intimately severed when introduced into y. pores of them. Some acid substances indeed such as ginger, Cincamon &c. preserve somewhat of their acrimony ~~that~~ will also in some degree retain the virtues of those substances in their natural state. Preserves or pickles with Vinegar will likewise in a great measure have only y. Virtues of pure Vinegar. but as the substances prepared in this manner are generally rendered harder & firmer, they of course

the rest of Mankind. If we add to this that the intellectual faculties are certainly as much improved by our ~~present~~ mode of living as they were obtunded by y. customs of life that then took place, I think ~~too~~ we have great reason to be satisfied with the change — That gross food blunts the faculties of mind is confirmed by y. general practice of all artful gamesters, & who refrain from full meals when they expect to be deeply engaged in Play. — I was told of a certain Gentleman who had ~~made~~ realized a princely estate by his knowledge of chances, that he made it a rule never to eat a dinner when he expected to be engaged in play in the evening; but kept his room for the whole day calculating the different probable & possible chances, & took nothing stronger than Tea, Coffee or very thin broth. —

are more difficult of digestion, by which they remain longer in the stomach, generating a greater quantity of fixed air & producing a stronger & more copious acid, & thus becoming particularly hurtful to persons labouring under flatulencies, a weak stomach &c. Dr. Cadogan in his treatise on y. Gout inveighs particularly against y. use of all kinds of pickles; we must however take notice y. he in a great measure confines his reflections to y. effect these substances would have in y. Gout & other chronic disorders, which are generally if not always accompanied w. a debility of y. stomach & a weakened digestion; when y. acid as well as y. fermentation of the substance are undoubtedly noxious; but in disorders not accompanied w. a tendency to putrescency they are far from being hurtful; on the contrary they may be attended w. no inconsiderable advantages. Thus we have now finished with y. consideration of Condiments and explained y. advantages as well as disadvantages of a Vegetable diet, we are in y. next place naturally led to the consideration of <u>animal food</u>. This differs from y. Vegetable aliment in several important respects. 1. As it is already of an animal nature it requires only Solution & Mixture to convert it into nourishment; whereas in Vegetables, Assimilation is also necessary. 2. It is therefore of more easy digestion & does not remain so long in y. Stomach as Vegetable aliment; 3. is considerably more nourishing & 4. instead of causing flatulencies &c. y. acid from y. acid in y. stomach, it disposes to y. putrefactive diatheses

Hence y. Disorders consequent on a too free or long continued use of animal food are all kinds of putrid fevers, Dysenteries & scurvy. Animal food is more stimulating to y. stomach & system than vegetable, hence y. fever always accompanying digestion is more considerable from animal food. It also gives richer & denser blood of more stimulating nature than Vegetables. Hence an animal diet should be avoided by persons subject to Hemorrhages of all kinds, particularly from y. lungs; inflammatory fevers, Apoplexy &c. Young people also particularly Children should use animal food sparingly; for like all other stimulants, y. too liberal & freq. use will wear out & at length debilitate y. whole system. We also feel heavier after a full Meal of flesh than Vegetables; for this reason persons who employ their nobler & mental operations should abstain from eating too much flesh meat. The solubility of meat differs according to y. age of the animal; full grown meats being of easier digestion than young; thus Beef is more easily digested than Veal, Mutton than Lamb &c. By full grown mean when y. animal has arrived at its full size both in height & circumference; and not when it is quite ancient; for then the muscular fibres become tendinous & consequently of very difficult solubility. This opinion is contrary to y. general established one amongst physicians; but is nevertheless consistent w. Reason and experience. All Animal food is of easier digestion as it approaches to alkalescency e.g. Venison & indeed all kind of Game is much easier digested than ~~tame~~ y. meat of tame or domestic animals, & Venison ~~is~~ is y. one of y. most Alkalescent meats. All Animals likewise

ex they advance in age, tend more to alkalescency. On the other hand
the Animals that contain much Viscosity or gluten are of more difficult
solubility. A proof of this we have in y. method used for dressing
Turtle. This is one of y. most glutinous foods that we eat, and
would therefore be hardly overcome by our organs for digestion,
were not for a great quantity of hot spices which are added in order to
excite y. more vigorous action of y. stomach & by y. means
hasten its remaining too long on y. stomach. Now all young
Animals have more Viscosity & gluten than y. older animals of y.
same kind. We know that our solids in their first formation con-
sist entirely of a gluten that by degrees hardens into animal fibres; y.
it is this gluten which supplies nourishment for y. increase of
y. body; hence Children & all young animals have y. glands much
larger & more numerous, & abound w. more mucus or gluten than
after they arrive at years of maturity. ~~From~~ I have thus demonstra-
ted from experience, & it must be evident to y. ~~feelings~~ generations of every person
that the more alkalescent ~~food~~ meats are of easier Solubility than
those w. are not so alkalescent; and y. ~~in fact~~ Meats are of difficult
solution in proportion to y. quantity of glutinous matter w. they
contain; I have also shewn that young animals are less alkalescent
than y. old & y. they abound more w. mucus or gluten; it is there-
fore a natural & self evident conclusion that y. flesh of ~~adults~~ animals full grown ~~flesh~~
is of more easy digestion than y. young. We may further add
that in young Animals there is no cellular membrane or fat inter-

happened between y. fibres of young animals; but that they are more closely connected & approximated & compacted than in old animals when y. interspersion of fat & cellular membranes seperates y. fibres & thus in fact renders the meat less firm. Hence we observe that y. lean part of fat meat is of y. most easy digestion, whilst on y. contrary y. lean of poor animals; where there is no interspersion of fat, is of y. most difficult solution & requires a very vigorous stomach to digest it. — Meat is also sooner perspired as it is more or less alkalescent, and y. body is not loaded so much after a full meal of alkalescent food, than after y. more glutinous; Hence ~~Venison & Mutton have always~~ for alkalescent meat is more stimulating & causes a greater degree of fever than y. glutinous; by w. the circulation is ~~increased~~ quickened & y. insensible perspiration increased; through w. the superfluity is again speedily evacuated. Hence Sanctorius & all Writers on statical experiments have universally allowed Venison & Mutton to be y. most perspirable & so in proportion as food is more or less alkalescent; & Lard declared by others, as being very glutinous, to ~~to~~ remain longest in y. system; & other substances tho be ~~same~~ sooner or later perspired as they approach in alkalescency to y. former, or in viscosity to y. latter. For this reason also, as they remain longer in y. system, Oysters & all kind of fish will sooner overload y. body and in y. end occasion a higher fever than y. most alkalescent food; on the same account when used for any length of time they will produce more dangerous disorders than what arise from ~~eating~~ using other fleshy meat. Thus eruptions on y. Skin, Scurvy, Dysenteries, putrid fevers &c. will

* Animal food is also more or less soluble according to ye manner of preparing it. For if it be much roasted or boiled it is deprived of its alkalescent and Juices, and rendered firmer, harder and of more difficult digestion. This is confirmed by a practice which takes place in hot climates & occurs in ye Summer. When Meat is tending to putrefaction we parboil it & thus may keep it a considerable time longer than we could otherwise do. This process is in ye Windies called jerking, whereby ye alkalescent fluids are taken away, the meat becomes drier & ye putrefactive tendency is diminished; but it at ye same time becomes more hard & less soluble; & this in proportion as it is more or less done. ~~Your~~ A more particular account of this matter you have in Dr Cadogans treatise on ye Gout, to which I refer you —

sooner arise from a continued use of fish than flesh, & entirely on the principle of its remaining longer in ye. system ~~& tending~~ have been there accumulated ~~& tending~~ to ye. putrefactive tendency. Hence we observe persons, who live near ye. Sea, generally of more robust habit & greatly affected w. eruptions only. Skin, ye. Scurvy, Dysentery & other Disorders. It is also on this principle that Oysters & other fish have generally been reckoned very nourishing & indeed are so, but then they seem to be properly only adapted to persons who labour hard or use much exercise, by wh. the accumulation in ye body is prevented. We seem by Nature to have an aversion to ye. long continued use of fish; for they very soon fall ye. appetite & become extremely disagreeable. This is evident from those persons who live near a Salmon Fishery, wh. is a rich & delicious fish. The servants who hire themselves always make an agreement wh. their Masters, that they are not to live on fish more than two days in ye. week. ✱ We therefore judge of the Solubility of animal food as it approaches to alkalescency or Viscidity; the former is ye. most, ye. latter ye. least soluble. For an account of ye. particular kinds of meat ye. are employed in our Diet, ~~& for~~ w. many other curious as well as useful disquisitions on this head, I refer you to Dr. Cullen's Treatise on ye. Materia medica, who has handled this subject very fully & in a masterly manner. What I should have further to say would be so little diff. from what he hath already said, that it would be only taking up time to little purpose.

Milk

This is a substance of an intermediate nature between Vegetable & animal, partaking of both, and of so general use both in Medicine & Diet, that it well deserves a particular and circumstantial account. We shall in ye first place treat of ye Secretion. In almost all viviparous animals there are in ye male as well as female, certain glandular appearances called ~~breasts~~ Mammæ which in at particular times & on certain occasions secrete Milk. They are of all Glands ye ~~most lax~~ least resisting, as they are placed without the ribs & muscles, not compressed by any of the neighbouring parts, surrounded with soft fat & covered with a lax smooth Skin. They differ from other glands in this particular respect that as these secrete their humours in an uninterrupted train; these on ye contrary, even in Women who are not barren, become dry, but in childbearing Women always swell & have proper Nourishment at hand for ye Infant immediately after its birth. This Phenomenon is indeed universally known, but the Cause of Milk being formed so opportunely, ~~only~~ at this particular time, and no other, hath afforded much matter for Speculation to the inquisitive.

The following considerations will tend to elucidate this matter. We observe that there is a great consent or sympathy between the Breasts & Uterus. Hence they are frequently afflicted with ye same disorders. Hence at ye menstrual ~~flux~~ discharge the Breasts swell & become painful; the same takes place in pregnancy & lying in Women. This intercourse & consent is encreased, if not owing to, by ye communication of blood & Spirits, between these organs.

The epigastric arteries send out branches, of which some join with ye. uterine, others running upwards form a considerable anastomosis with ye. mammaria, by wh. the blood from ye. one easily communicates & is carried to the other: hence on particular occasions a greater or less quantity of blood is determined to ye. breasts. — Thus we see that whatever compresses ye. epigastric vessels, affects ye. breasts & Bartholinus gives us the history of a youth afflicted with a rupture, whose near pap always began to swell when the truss by wh. the hernia was ~~rela~~ kept within bounds, was tightened, & by wh. the epigastric artery was compressed; in ye. same manner, as soon as the gravid uterus begins to distend ye. abdomen, these vessels are compressed. This is further illustrated by what we observe in women in childbed & new born Infants. — A great quantity of blood is during gestation carried to ye. uterus, where it is accumulated, dilating the neighbouring vessels & is carried in great quantity to those parts that make least resistance; hence during gestation the breasts swell as enlarged; but after birth whilst ye. Lochia continue to flow, the epigastric vessels are not so much distended, on wh. account the breasts decrease, but again swell on ye. suppression or rather cessation of the Lochia. In children new born, after the umbilical cord is tied, the blood hath no longer a passage through the umbilical vessels. After the ~~whole~~ circulation is thus altogether changed, ye. blood driven from ye. usual passages, it ~~do~~ fills the neighbouring vessels, to wit the hypogastric, external iliac, epigastric & mamaria arteries. — Hence in Infants, a few days after birth,

ere is a Secretion of Milk; sometimes it even happens, that ye. impetus
ye. blood is so violent as to distend ye. uterine Vessels & occasion
discharge from ye. uterus of ye. Infant. Examples of this you will
find recorded in ye. Transactions of ye. royal academy of Sciences of Paris. 1703
From what we have now said it appears that ye. Secretion of milk
owing to a ~~derivation~~ determination of blood ~~from~~ through ye. epigastric arteries to ye. breasts;
which also happens tho there is not ye. least symptom of plethora in ye. body.
Many Arguments may be brought in proof of this. It is evident ye.
pregnant women are not plethoric; much less childbed women, who
for some days after delivery lose a great quantity of blood, and are at
the same time kept on a low diet; yet besides it sometimes happens
that women in Childbed are seized w. disorders ye. require ye. loss of
several pounds of blood, independant of ye. loss they sustain by ye.
uterine evacuation, & yet the breasts afford a sufficient quantity
of milk for ye. nourishment of ye. child. The Nurses have also
frequently a sufficient quantity of milk tho there are no signs of
plethora; nay we have even Instances of Nurses losing 20 lb of
their natural weight within 6 Weeks, without loss of health & their
the Infant, and suffering little or no diminution of milk.
But ye. secretion of Milk is greatly increased by sucking, & we seldom
indeed meet w. any great quantities of milk in ye. breast untill after
repeated suction. May Dr. Waller, Raspail & Delgras give us ~~examples~~
instances where by suction ~~the~~ a flow of Milk hath been produced
from ye. breasts of Virgins and even of Men. If the breasts
are not soon sucked after ~~laying in~~ delivery, the Milk is frequently

ort; for ye reason ye Child should be put to ye breast soon not only
to encrease the quantity of Milk, but also to prevent obstructions,
inflammations, Abscesses &c. in ye breast. It hath been observed
in Hospitals instituted for ye reception of pregnant Women, where
the mother is by ye physicians directed to give ye Child ye breast within
24 hours after birth, that not above 2 Women in 1400 are afflicted wth
any disorders in ye breast, whilst before when ye Child was not put to
the breast before the 3d or 4th day, these complaints were very common.
For by this method the glands are stimulated, & we know ye stimulus
applied to ye glands will encrease ye secretion as well as expection of
fluids from them; the ducti lactifi are dilated & give a free passage
to ye Milk, by wch obstructions in ye fine small & fine vessels are prevented.
Milk consists of 3 parts: 1. The oily part or cream which is much of ye
same nature wth vegetable expressed oils. 2. The coagulable part
which bears resemblance in quality to white of Eggs & to ye coagulable
Lymph of blood. 3. Water in wch a saline saccharine matter
is dissolved and this is ye most considerable part of Milk. We may
obtain these 3 parts separate under ye form of Butter, Cheese & Whey.
It hath been generally supposed that Milk taken into our Stomach
suffers no decomposition, but is immediately taken up into ye
Blood, without first changing its nature. This is however a mistake
for it is decomposed in the Stomach, its these coagulated, liable
to ferment, & is taken up into ye Blood after having been decom-
pounded. As it is of an intermediate nature between Vegetable
& animal substances it hath many advantages wth those have not

For from its containing a certain proportion of animal matter it is not liable to the noxious vinous fermentation at y. same time more nourishing than Vegetables; & from its partaking of y. Vegetable nature it is not attended w. so much Stimulus & fever as and. food. It is therefore suited to all temperaments, but particularly for y. food of children and persons troubled with hectic fever; and is only hurtful to people who have a strong acid in their Stomach, by which a very hard coagulum is formed & it further hurts by its acrimony. It is likewise hurtful to persons recovering from Intermittents by causing refrigeration & thus tending to produce relapse kind y. intermittent. The diff. kinds of Milk employed either in Medicine or diet are Asses, Mares & human Milk w. differ considerably from y. Milk of Cows, Goats & Sheep; the three former are not so acrid as y. latter; are not so readily coagulated & afford a more soluble coagulum, nor do they contain so much oil & coagulable matter: They are therefore particularly calculated for persons without fever, whilst y. others, on account of their acrimony may be used w. better propriety where there is fever.

Cows, Goats & Sheeps Milk agree pretty much in their Nature. They ~~have~~ contain nearly y. same quantity of Cream, coagulable part &c. except the Milk of the Sheep, which hath much less whey than the other two: They are easily coagulated by Acids, & other Coagulums usually employed for the purpose: They are therefore considerably more acrid than ass, mares or human Milk & therefore not so easily digested by persons of weak Stomachs as the latter.

Human & Asses Milk have been recommended for particular disorders in preference to either Cows or Goats Milk; in order to judge of ye propriety of this preference, it is necessary that we should enquire into the particulars by which they are distinguished. — Asses Milk differs considerably from ye Cows: it is not so acrid, & cannot be coagulated by ye Coagulums usually employed for ye purpose. By rest & stagnation there is a complete separation of ye different parts of it: ye mucilaginous part ~~goes~~ to ye bottom, the Cream ~~remains~~ ascends & the Serum or Whey occupies ye middle. Asses Milk contains a large quantity of Whey, but very little of Cream or Cheese; it is very similar to Human Milk, tho this contains a great quantity of Cream, which may be easily converted into Butter; but ~~the Cream of~~ no Butter can be obtained from ye Cream of Asses Milk. Mares Milk is seldom prescribed as a Medicine; it is entirely of ye same Nature wth Asses Milk, except that the oily parts are in less quantity. Human Milk differs also very considerably from y^e of Cows. It is not liable to be coagulated by ye various Acids, ~~whether~~ nor by Acids, whether mineral or Vegetable, & tho they be mixed in a considerable quantity with the Milk, we cannot produce a separation of ye Whey from ye mucilaginous

XX. From y. difference which I have now pointed out to you ~~between~~ human & Ass's Milk from y. of goats & Cows, it is evident that in some disorders they are preferable to y. latter & y. y. distinction is founded on reason & as y. Milks are most certainly ~~of different~~ in qualities When y. Organs of digestion are so weak as to reject the Milk of Cows, y. stomach will sometimes bear human or Ass's Milk & we accordingly have instances of persons ~~whose~~ whose lives were ~~dep~~ being saved by sucking a healthy Nurse

XX This ~~confirms an~~ strongly confirms an Opinion that I advanced in the beginning of these Letters; when I told you that y. ~~ap~~ appearance of secreted fluids, was not by any means a fair view of y. state of y. natural humors of our body; but is in general to be attributed to y. Organ of Secretion. For from y. most accurate experiments it appears y. Nurses may be afflicted with Diseases & yet y. Child not suffer from it; ~~or~~ strong affections of y. Mind will produce ~~any~~ sudden & great effects in the Child. We know y. Children sucking Nurses under violent agitations of rage, have been seized with Convulsions & expired unless ~~the~~ Milk was rejected by vomiting. A sudden change wrought on y. Milk must have been produced in the breast & ~~during~~ Secretion. This observation is by no means confined to Organs of Secretion. It appears as strongly in y. Organs of digestion: thus an unexpected affront or bad tidings will disorder y. whole frame & affect Digestion to such a degree y. every thing in the stomach will be vitiated & in a manner corrupted.

matter; warming or even boiling y. Milk for this purpose is
found to be equally ineffectual. This separation may still
however ~~naturally~~ take place of itself, especially if we
keep the Milk in a place warmed to y. degree of 96. We
observed this also to happen daily in Infants when they
throw up their Milk. # There is a considerable difference in
human Milk; in some Women it is white & thick; in
others it appears thin & diluted with very little Cream. It
is highly probable that human Milk is not so ~~eas~~ readily
affected & changed by Diet & Disease, as the Milk of ruminating
Animals: We often observe the Milk of Women to be in all appearance
the same in Diseases as in Health: Nurses are sometimes
considerably indisposed, & yet the Children are not affected; &
there are even Instances of their being affected with y. venereal
disease, whilst y. Children at y. Breast continue free
from it: it is also very doubtful whether purgatives given
to Nurses will render the Milk laxative & thus affect y.
Child. I know two Instances of Nurses who took Mercury
until their Mouths were sore; but their Milk neither
turned Silver black or Gold white; which is commonly done
by y. exhalations or sweat of persons under a mercurial
course. # ~~Lastly~~ We are next led to consider whence

Milk is derived. Some are of opinion that Milk is secreted from y. blood; whilst others contend that this secretion is made immediately from y. Chyle on its entering the Circulation. It is difficult to ascertain this. for we do not yet perfectly know y. Analysis of the Chyle, we are also ignorant of y. quantity y. enters into y. blood in a certain time & how long before it is converted into blood. — The Advocates for the latter opinion object to y. former that Nurses give about a quart of Milk a day, & some Cows no less than 24 quarts; if therefore Milk were secreted from y. blood, there could not be a sufficient supply without loss of strength & danger of life; moreover Milk & blood differ very materially; for Milk is resolved into Cream, Whey & Curds & turns sour; whereas blood soon turns putrid. In y latter Argument there appears some reason; but y. former is altogether inconclusive, whilst we remain ignorant of y. quantity of Chyle y. enters y. circulation in a given time. It is however more probable that Milk is secreted from Chyle than from blood; for Milk is more or less recent according to the Nourishment used. This is evident from y. experiments made by Dr Young on a Bitch: he observed that y. Milk was of an alkalescent or putrescent nature when y. Animal was kept on flesh; but acescent when confined solely to a Vegetable diet —

Milk hath been frequently employed for ye Cure of Diseases, we shall enquire into ye foundation of its Virtues & thence infer its use. We have already observed that Milk is extremely well adapted for ye nourishment of ye body; as it is of an intermediate nature between a Vegetable & animal food; possessing ye good qualities of both, without ~~any of~~ their ~~noxious~~ disadvantages of either. We are further to observe ye by boiling Milk is considerably changed & rendered less acrid, therefore less purgative. It ~~must~~ ought is ever to be preferred new & before it hath stood any time so as to separate. The Milk of ruminating Animals is of more difficult digestion than human or Asses Milk, as it contains more of oil & mucilage; it is also more acrid & partakes more of ye Nature of Vegetables, & therefore to be preferred in Diseases accompanied w. a putrefactive tendency. Milk when for a considerable length of time changes the state of humours & is eminently serviceable in correcting or boiling ye inspissated distinct. Butter Milk is less nourishing than sweet Milk; but is more acrid; therefore more cooling & laxative. Whey, being deprived of ye oily & mucilaginous parts, ~~of Milk~~ is less nourishing than Milk, but more acrid; hence more cooling & laxative; it may therefore be ~~ordered~~ given in many diseases, when pure Milk would be improper; it also sooner enters into & changes ye humors & system in general. Milk is ~~th~~ serviceable in all kinds of hectic fever; & useful to those recovering from inflammatory diseases. It hath from ye

earliest ages been employed in consumptive disorders; all kinds of Milk have been recommended for this purpose, but human & Asses Milk deserve an undoubted preference; for reasons above given. The patients should not confine themselves to any particular quantity, but take as much as the stomach will bear. Riverius, Hofmann & many other Authors give us instances of persons recovered from death by ye free use of Milk, particularly of Asses & human Milk. Milk Whey is likewise an excellent remedy in this disorder. In a former Lecture I mentioned its good qualities in inf^l fevers whether ~~arising~~ owing to an inflamatory or putrid diathesis. In internal Ulcers it is perhaps one of ye safest & most efficacious remedys: It affords a plentiful & cooling nourishment; resists ye too great putrescency of ye humours & may be given with great safety when Milk cannot; for ye same reason Buttermilk is frequently highly useful in these Complaints. As Milk he was found serviceable in all kinds of inflammatory diseases, it was judged that it might be attended with equally good effects in the Gout. This disease ~~has~~ generally appears with ~~highly~~ inflamatory symptoms; which it is not always prudent to mitigate by Cauants; ~~to~~ old people particularly labouring under this disease, have their nervous system frequently so debilitated, that prudence forbids the use of any remedies that tend still further to weaken it. And tho there are Instances of a Milk Diet having afforded them considerable relief, yet it is not always safe for them to live solely on Milk, after more stimulating food hath once become necessary; it frequently indeed happens

that by this course they are freed from y. painful ~~appearance~~ attack of y.
Gout in the extremities, but are seized w. some other disease attended
with more danger & generally indeed fatal. ~~People~~ Persons advanced in
Years should therefore have a considerable degree of Vigour remai-
ning if the mean to get relieved of y. Gout by this or perhaps
any other method: in young persons this Caution is not necessary,
& there is not probably a more effectual cure for this disease
than a Milk diet which at y. same time that it corrects y.
inflammatory diathesis, supports y. strength & Vis Vitæ of y. patient.
It must however be accompanied with sufficient exercise &
a proper abstinence from Venery & Wine. — If you recollect
what I said on y. Nature & Cause of the Scurvy, you must be sensible
that a Milk Diet is extremely rational & proper; for as in this
disease the fluids & solids evidently tend to ~~putrefaction~~ putrescency
y. Cure can only be performed by such substances as supply an
incorrupt Chyle; nothing can answer this Indication better than
Milk, particularly of y. Cow or Goat, except Whey or Butter Milk,
from y. greater disposition to Acescency. — Milk is also
highly useful when Poison hath been inadvertently swallowed:
many physicians consider it as the sovereign remedy, for it not only
defends the Coats of the Stomach from y. irritation of y. poison,
but its oily, mild & soft quality it involves the poison & obtunds
the acrimony, and at the same time affords a proper Vehicle
or Liquid to carry off y. offending Cause by Vomiting: in the Cathplasm
& its demulcent quality it guards against the violent contractions

Spasms of the Stomach, which are generally occasioned by acrid poysons.
Hoffmann gives us an Instance of ten boys who had taken
arsenic in an oaten cake, intended to destroy Vermin, that were
saved by drinking large draughts of warm Milk. There is perhaps
not a remedy better adapted for emergencies of this kind than
Milk which has this further in its favour, that when children are
in this miserable condition, we may prevail on them to drink
~~cold Milk~~ this in larger quantities, than Sweetwater or warm Water.
We should also observe that ~~after~~ the y. most immediate danger is
avoided, persons who have taken poyson, should for a considerable
time live almost solely on a Milk diet & at times take some
Castor or Sweet oil; for we cannot be certain that all y. poyson
is evacuated; & we ought most carefully to guard against any that
may remain in the Coats of the Stomach & be there disposed; for
there are Instances of persons dying ~~considerable~~ of y. effects of
poysonous Substances, a considerable time after they had swallowed
them & when the danger was thought to be overcome.
Disorders of y. Stomach &c are often relieved by Milk Diet & persist
when more potent remedies have failed. Disorders also of the
bowels particularly Diarrhoea & dysentery are frequently mitigated
& not altogether cured by a free use of Milk. When these diseases
are continued for some time, the mucus lining y. Intestines is
eroded & carried off by Stool. The Coats of the Gut ~~thus~~ left bare
are constantly irritated & sometimes inflamed attended with the
most excruciating gripings & often terrible convulsions: boiled Milk
is an excellent drink in cases of this kind; as by boiling it becomes

more glutinous & less acrid & less laxative. — A Woman near Germantown acquired some time ago great fame by a ~~remedy~~ supposed specifick for the cure of the flux. On enquiring I found that the secret consisted in boiling a sheet or two of white paper in milk, by which its cutitious & demulent quality was encreased. — Another remedy of less fame is boiling or rather dissolving ½ ℔ of mutton suet in a pint of milk which is to be drank at bed time & repeated if necessary. — I know an instance where this was attended with singularly good effects, & have heard of many cures being accomplished with it, when Physicians of eminence had endeavoured to relieve the complaint, but without effect. — Another domestic medicine equally efficacious with the former is boiling comfrey or marshmallow roots in milk & letting the patient drink the decoction repeatedly. — All these different preparations act on the same principle; viz. by their mucilaginous, oily & demulent quality sheathing the interior surface of the intestines & supplying the place of the natural mucus, they defend the guts from the irritation which occasions the griping & tenesmus. Many other substances will answer equally well, for instance sago, salop, & if the preparation is to be more ~~mild~~ physical gum tragacanth or arabic boiled in milk will be attended with the same effect. — A Milk Diet is also indicated when we purpose to induce a change in the humours of our body in order to extirpate some constitutional disease, or any disorder in which the fluids are affected with the solids. I told you in

a former Lecture, that great changes in the constitution of our body, or alterations in ye nature of our fluids are only to be brought about by gradual means & oftener by a proper diet, than by what are properly called Medicines. In scrophulous, cancerous & venereal Complaints a Milk Diet hath afforded considerable relief. Galenicus tells us that by a plentiful & long continued use of Asses Milk he dissipated a cancerous tumor in the Neck of the Uterus. But ~~as~~ after a Cancer is become incurable, persons have been preserved for many years by confining themselves ~~according~~ altogether to a Milk diet & preparations of Milk: for as Cancerous Ulcers are always attended with a considerable irritation & ye discharge of a thin acrid Sanies, even ye feeling from animal food aggravates ye disease. In Venereal ~~Ulcers~~ Complaints & Ulcers a Milk diet hath sometimes succeeded after other means had failed. Hoffman gives us the case of a military Gentleman who had been for many years sorely afflicted by venereall pains ye had nearly reduced him to the last extremity; & was at length after many fruitless attempts by Med. relieved by a course of Asses Milk. Doctor Monro related ye cases of two young Gentlemen afflicted with Venereal Ulcers, for which they had been repeatedly salivated & reduced very low; but the Ulcers continued to ~~spread~~ extend both in depth & breadth; by his advice they betook themselves to the country & subsisted altogether on a Milk Diet, which relieved them of every Symptom of the disease in 6 Weeks. — From this general View of Milk its importance in diet appears to be very considerable. Nature hath not only designed it for ye Nourishment of ye young Animals; but it certainly also claims the first place in a dietetic regimen. & from ye principles of its qualities & constituent parts not enumerated, I hope you will be able to judge of ye propriety & impropriety of a Milk diet in particular cases & constitutions.

~~my las~~ I concluded my last Lecture with enumerating the
vantages & disadvantages of a Milk diet, which finished our
rations on Nourishment. — I shall now shortly recapitu
the general principles & observations relating to that subject,
hich we have established in the six preceding Lectures. — I began
ith telling you that all our Nourishment was either of a Vegetable
animal Nature; that Man was designed to partake of both; this
as evident from y. construction of his teeth & conformation of his
els, which was strongly confirmed by y. good effects a mixed
t had, & y. disadvantages attending those persons who confined
emselves entirely to the one or other. — It was observed that
sons subsisting on Vegetables were in general weak, pusillanimous,
d commonly subject to Indigestions, flatulencies & other disorders of y.
els; whilst those who lived on animal food were exposed to very
lent & dangerous diseases of y. inflammatory & putrid kind. —
e Digestion of our food claimed our next attention. — It appeared
om Prizli's & Dr. Fordyce's experiments
y. Saliva, gastric Liquor & pancreatic Juice were very similar in
eir nature & appearances; that they were composed of Water & a
all quantity of viscid matter; that their use was to dispose both
table & animal matter to ferment & at y. same time to mo
rate their fermentation in such a manner, as to prevent its running
to y. acetous or putrid. We then enquired into y. manner in which
estion was performed. Here we found that Authors had differed con
erably in their manner of accounting for this phenomenon: that
ne explained it by supposing the stomach furnished with a Solvent:

* That digestion in ye. human body is performed by means of a Solvent only, without ye. intervention of any fermentation is the opinion of Mr. John Hunter, Reaumur, the Abbe Spalazzani, Stephens &c & is the antient Theory of Hippocrates & succeeding Ages. But notwithstanding the authority of such respectable characters I think fermentation takes place in our system & completes the process & assimilate the various nourishment that we take into the stomach — The state of this organ in different circumstances seems to prove this, & particularly in persons of weak digestive powers; in these we often find indubitable signs of it.

but others endeavoured to explain it on the principles of Mechanics; these considered the stomach as a muscular Organ, & by comparing it with the smaller Muscles, they estimated its force to be more than capable of grinding any matter received into the stomach. Both hypotheses took their rise from what was observed to happen in different Animals: But Mr. Reaumurs expts shewed us that neither side was altogether right, nor quite wrong. — He found that in some Birds digestion was performed by actual force or texture; whilst others were furnished with a solvent for this purpose: but the human stomach differs from both; & in this we found this process to be completed by fermentation, which is of 3 kinds, the Vinous, acetous & putrid: all of these it is probable take place in the human body; but are prevented from running into excess by ye fluids already enumerated & still more by ye Bile.* It was observed that this fluid possessed not a saponaceous quality; that in this respect it was even inferior to a solution of Sugar & water: nor was it alcalescent or putrescent: but that its effects depended on the bitterness; by which it ~~prevents~~ prevented both ye acetous & putrid fermentation: we instanced this what is observed in Medicine; where bitters will not only correct the too great acescency in the stomach, but are also ye amongst the strongest antiseptics employed in putrid diseases.

It was observed that all Vegetables were more or less nourishing, as they possessed a greater or less quantity of Sugar & Oil; for that these were the foundation of Nourishment in all Vegetables: the more intimately these are blended or mixt together, the wholesomer & easier digested the substances will be; as for instance in grain of

all kinds: Nuts on the contrary, especially those abounding with
oil, are difficult of digestion & occasion flatulencies. Vegetable
aliment we found improper for persons subject to flatulencies,
troubled with Indigestions & costiveness arising from this cause:
in those habits of body it was apt to occasion the heartburn
or Cardialgia; Cholics, Diarrhoeas & y. Cholera Morbus. It was is
therefore improper for persons subject to the hysteric & hypo-
chondriac disease: But is highly proper in all inflamatory
diseases, or in persons subject to them; hemorrhages, apoplexies,
putrid disorders of all kinds: particularly Dysenteries & y. Scurvy.
An Animal Diet again is hurtful in these Diseases; but
serviceable where ~~ap~~ ~~the~~ Stomach abounds with Acid & flatulency.
Meat is ~~of more~~ of easier digestion as it is more alkalescent,
contains less gluten or viscosity: for this reason the Meat
of full grown Animals is ~~of~~ more soluble than that of young:
& wild Meats are in general easier digested than tame; —
for y. same reason Meat much or overdone is not so easily
digested as when rare. —— To render our food more
palatable & correct any bad tendency it may have, Condements
are made use of. — Under this head we in y. 1st place reckoned
aromatic substances, or spices. These we observed were improperly
used with Animal substances, as they encreased the stimulus
attending this diet; but useful with Vegetables, preventing y.
flatulencies & correcting y. acescency y. commonly attends y. use of
Vegetable diet: Providence hath therefore wisely ordained them to

grow in the warmer climates, where ye Inhabitants subsist in a great measure on Vegetables: but in the colder climates, where an animal food is more proper, the Condiments suited to it are produced in abundance; viz: ye different kinds of Cresses, Radish, Horseradish, Onions, Leek, Garlick &c — Salt is one of ye most grateful Condiments to our food: When used it resists putrefaction excites ye appetite, assists ye digestion, & is a most agreeable stimulus to our System. — Sugar is highly antiseptic, very nourishing & destroys Worms. — Vinegar is useful as an antiseptic & corrects ye inflamatory diathesis; it also prevents ye Vinous fermentation in the Stomach. — Drink is necessary to supply fluid for ye body; when taken moderately it assists digestion & encreases ye quantity of Chyle; but if taken in large quantities it encreases ye discharges by stool & renders ye Alement less nutritious. — As delicacy of feeling, liveliness of imagination quickness of apprehension & acuteness of judgment, more frequently accompany a weak state of ye body; Vegetable Alement appears ~~no better~~ adapted for studious persons: true indeed it is, ye this state of ye body is liable to timidity, fluctuation & doubt; whilst in a more robust constitution there is steadiness of ~~mind~~ judgment & firmness of purpose, proper for ye higher & more active scenes of Life. Vegetable Alement as it never overdistends ye Vessels or overloads the System, does not interrupts ye efforts of ye mind; whilst ye heat, fulness & weight, ye attend animal food, are an enemy

XX. I cannot dismiss this subject without again observing to you that as a judicious regimen is frequently of the last consequence in the cure of chronic diseases particularly, so that it is the general misfortune amongst us are in general very little acquainted with the Principles by which we must govern ourselves in preserving a Regimen. — You must be sensible from what hath been delivered on the subject, that we ought always to attend to the state of the stomach especially as well as to the nature of the Aliment. An instance will illustrate my meaning — Milk is no doubt one of the substances of most easy digestion employed in diet; but if a Milk diet were to be ordered to a Person of a weak stomach abounding with acid it would certainly be of the most difficult digestion to him; it would in the first place increase the acidity & the curd would be so hard & firm that the powers of the stomach could not dissolve it. — From this it is evident that the term of hard & easy digestion should always be taken in a very general or rather relative sense & never to be applyed to particular cases without at the same time attending to the state of the stomach. — It frequently happens that a person will readily digest ham & salted meats to whom bread is a substance of the most difficult solution; but by bearing in mind the Principles which have been laid down on the nature of Aliment & taking into consideration the state of the stomach, you cannot I think be at a loss to prescribe such a Regimen as will always suit the Indication

to its vigorous exertions. Those therefore who would wish to improve the faculties of the Mind, in preference to strength of body, should live more on Vegetable than animal diet. Temperance depends more on the quality, than quantity, of the food we use. A person may be temperate in eating & yet eat more than another who is far from being so: for the latter be eating even a less quantity of high seasoned and food than y. former & a larger quantity of Vegetable Aliment is certainly more intemperate, for y. same reason that a person of Wine is more intemperate than a sober person who confines himself to Beer. # To conclude & with the Class of Nutrientia we observe: that as Animals are in a constant waste, which is probably in some measure in proportion to every part of the animal substance; it is necessary that there should be a constant supply of Nourishment to repair this Waste. All Animal fluids are formed from y. Aliment y. animal takes in: & y. solids again are formed out of them, & most probably ~~from~~ out of y. coagulable Lymph. It is therefore probable that by this constant Waste & repair, it becomes in time in a manner a different animal from what it originally was, & retains very little of its primitive parts. We may therefore conclude that by diet we can produce considerable alterations in y. constitution, & even change it from its first conformation; but then a great length of time is necessary to accomplish this it

Before I dismiss the subject of digestion I must make a remark that is too obvious not to strike y. attention. We find that on one of the most common occurrences that takes place in our System, Physiologists differ as much at this day as they did in any former Period. It is however fortunate for Mankind that Theories no longer have that influence on Practice they formerly had, & that whatever speculations may be entertained on the nature of digestion, the remedies by which the one of the Stomach is to be improved & indigestion relieved rest on y. firm basis of experience, & are not influenced by opinion. When wi come to treat of Indigestion as a disease I shall have an opportunity of explaining the Symptoms or Phenomena, which in my opinion can only be done by admitting the doctrine of fermentation, & we shall then find that y. Remedies calculated to relieve the complaint are particularly such as have a tendency to resist or check fermentation of every kind.

4. This subject has within these few years again engaged the attention of Physiologists & Philosophers & the Abbé Spalzani in Italy has been particularly assiduous in making experiments to ascertain in what digestion consists. He is decidedly of opinion that it is performed by the gastric fluid or Juices of the stomach without any fermentation taking place in that organ. This opinion is likewise supported by Dr. Stevens in a number of experiments which he made at Edinburgh & published in a Thesis on taking a Doctor's degree in Physick.

Astringents. ~~By~~ under which term we comprehend such substances
as have a power of approximating ye parts of our body, & en-
creasing their cohesion. This is evident from ye effects we observe
from them in the living body; but they also exert this quality
on inanimate as animal fibres; of this Oak bark is an instance, which is
usually used in the tanning process, for rendering the hides of
animal firmer, thicker & stronger. This property is not con-
fined to the Oak, but is general to all astringent substances,
& we accordingly find that in different Countrys, various sub-
stances are employed for the purpose. — Nature hath furnished
us with a very great Number of Astringents: we have both
mineral & Vegetable substances in abundance endued w.th this
quality: We discover it by the following signs: On tasting any as-
tringent substance we perceive it to contract &
constipate the parts: The palate feels rough & unequal. The Vessels
of the Lips, through which, on account of the thinness of ye covering
membranes, the red blood shines, ~~through~~, ~~upon~~ or being thickened
by any astringent substance become pallid, & the lips are deprived
of their redness; And all Vegetable astringents strike a black co-
lour or Inke on being mixed with any of ye preparations
of Iron ——

Hoffman, in speaking of Astringents, says, that if we are happy time to be cautious in administering remedies, we must be so, when we prescribe adstringents. For ~~that~~ by Experience we know, that ~~if~~ adstringents ~~are~~ given unreasonably ~~to~~ stop ~~ping~~ hæmorrhages, often ~~bring on~~ are attended with very bad consequences, & ~~that y.~~ ~~sick~~ ~~patients~~ ~~come~~ bring on ~~of~~ hectic fevers, cachexy, œdematous swellings, spasmodic affections, colics &c —— In my last lecture I told you that by astringents we mean such remedies as exercise y. cohesion of y. parts of our body; & y. synonimous ~~to~~ adstringentia are y. terms Roborantia, Constringentia, Arctantia, Contrahentia, Includentia, Alexnotica, Styptica: & if ~~they act~~ pare to on y. fluid parts of y. body: Condensantia, Inspissantia, Coagulantia. We shall next enquire what parts of our body are more particularly affected by astringents: & in y. first place whether their action is confined to y. simple solids, or to y. moving fibre. We see many remedies that ~~have~~ do not in y. least affect y. simple fibre, but act entirely on y. moving fibres. Opium for instance has not y. least effect ~~on~~ y. simple fibres

But Astringents are also found to encrease y. cohesion of anim. fibres after y. death of y. anim.l & seem to have y. same power then as while y. anim. was living. But you will please to observe that in this case they only affect the fibres to which they are immediately applied, but in y. living animal their effects are extended over y. whole system, tho we apply them only to a particular part, w. ~~they~~ would by no means be y. case if they affected only y. simple fibres without acting on some of y. other parts of y. body. This effect can be explained in two ways. The most common & most ancient is: That they are ~~taken~~ by y. circulation of y. blood conveyed ~~into~~ y. most distant parts: The other opinion is: That they act only on y. stomach & Intestines & their effects are by y. nerves extended over y. whole System. — The first opinion I confess is plausible, but if we examine it ~~closely~~ accurately I imagine it will be found false. In y. first place then: ~~If it~~ a considerable space of time is required before matters in y. primæ viæ can be taken up & assimilated w. y. blood whilst Astringents ~~off~~ are often no sooner taken into y. stomach before their effects are communicated to y. whole body. And this ~~open~~ fact alone is sufficient to invalidate

y. first opinion But besides this there are all others & in y.
2d. place: Adstringents, as well as all other remedies, must
first be dissolved before they can enter y. blood; & if
they be then equally diffused through y. whole mass, a
very small portion must necessarily come to every par-
ticular part, & quite insufficient to ~~stop~~ contract
y. solid or coagullate y. fluid parts. 3. If Adstringents
are applied to y. external parts they may stop hemor-
rhages either by contracting y. solid or coagulating
y. fluid parts, & then act mechanically, i.e. on
y. simple fibre. But if they are taken into y. stomach
w. an intention to have this effect by coagulating
y. fluids, you must easily perceive that they cannot
do it in one particular place, but must coagulate
y. whole mass of blood, w. would inevitably cause y.
destruction of y. animal These & other considerations
place it w. me beyond all manner of doubt that
Adstringents do not act by being taken up in y. blood,
tho & many Authors of great Note assert they do
& even give Expts to prove it; but ~~then~~ besides y.
above considerations there are expts of equal force at
least to prove they do not

We must therefore adopt ye. other opinion viz: that they act on ye. vital principle & ye. their effects are exten over ye. whole system by means of ye Nerves. But ho this action is performed or in what manner they a on ye. Nerves ~~in one of these ways~~ may perhaps be discovered in some future age, as well as ho cold applied to a particular part will sometim have ye. same effect in stopping evacuations. I forbe giving you any Theory or opinion of this matter, w we must rest satisfied wt. knowing ye. fact, tho are ignorant of ye. cause. In my last Lecture I la down some general rules wt. regard to ye. use of Astri gents in Diseases, & I shall now give you an ac of ye. particular Diseases in wh. they may be used & under what circumstances. And in ye. first pl we shall consider their effects in Hæmorhages w taken internally. This has afforded matter for dis for to Physicians in all ages, ~~nor~~ & hitherto they ha not been able to agree about it. Some praise them as infallible in these cases; whilst others condemn them as

pernicious & dangerous to ye human frame. I shall not enter at all into ye dispute in this place, but give you some general rules wch. regard to their use.

1. If from ye suppression of any natural evacuation a hemorrhage ensues, ye use of adstringents is highly improper, unless there is danger of losing ye patient. If ye hemorrhage issues from an unusual part of ye body, we must not stop it, untill we have restored ye determination of ye fluids to their proper channel. For instance: If from a suppression of ye menses ye humours ~~are determined to~~ form an ulcer in some distant part of ye body from wch. there is a periodical evacuation, we are not stop this before we have brought on ye natural excretion; for otherwise we bring on more dangerous symptoms than those we endeavour to relieve. But we may give them in ~~repeat~~ small & repeated doses after ye natural evacuation is restored. ——

2. We should not stop any evacuation suddenly, wch. has become habitual to ye system, tho it be not owing to ye stoppage of some natural excretion; for we shall in this case run ye same risks as in ye former by ye pre

natural stoppage of y. discharge. And in this case y. cure must be adapted to y. constitution, age or other concomitant circumstances of y. patient. If he is of a full habit of bo we should order bloodletting, cooling remedies & such as give y. a new determination to y. fluids, & take off spasms y. generally accompany ~~the~~ these cases. This method will often cure y. disease; but if it should not perform it entirely we then properly give y. weak astringents in small doses & continue them for a considerable time —

In hemorrhages there is generally a lax state of y. intestines But by a continued use of astringents the body often becomes costive; in this case then we must combine them w. gentle laxatives.

In cases where y. evacuation is so considerable as to threaten life of y. patient, we must give him adstringents, w. out paying any regard to y. circumstances y. would in slight cases prohibit y. use of these med. We must give strongest styptic astringents untill y. patient is thought to be out of danger; but then lay them aside, least the use may be attended w. inconvenience.

We must also pay some regard to ye habit of ye body; if the patient is strong & robust we must order a Stim to be opened before we give astringents; for these by encreasing ye contraction of ye solid parts, make them less & too small for their contents, unless these be previously evacuated; & it is often necessary to premise bleeding tho ye habit of body be not strong & robust; for in general there are some febrile symptoms always accompanying evacuations; bleeding then is of service in this case as it takes off these & at ye same time diminishes ye evacuation

But if there is neither a full habit of body, nor an encreased motion of fluids; but y^e ~~evacuation~~ hemorrhage is owing to a relaxation of ye blood Vessels; w^h often happens in amputations, then bleeding is highly improper & astringents should be given. The celebrated Monro has these words: A great many of those who have a Limb amputated become weak, lean & often from an ulcer being formed a hectic fever seizes them: in this case their Vessels are so relaxed & their blood so thin that it oozes out from innumerable small orifices. If

you bled in this case you diminish ye quantity of blood & ye strength of ye patient, & encrease ye cause of ye hemorrhage. In this case, Sorder, says he, ye peruvian bark & warm cloat in w^h Nutmeg, cinnamon or Mace has been infused, & prescribe ~~order them~~ such a diet as is nourishing & moderately stimulating.

It is of use to know y^t a recent hemorrhage may be suppressed w^h more safety, than one that has lasted for some time. But in this case we should also examine ye circumstances well before we give Astringents. When we know y^t ye cause is not removed we may give them to no purpose & often w^h danger. For instance if a Woman, who has advanced beyond ye 6th Month in pregnancy, ~~a~~ labours under a hemorrhage of ye Uterus, y^t will not yield to bleeding & ye cooling regimen, she should be delivered immediately. For if we give astringents in this case they will instead of diminishing, encrease ye hemorrhage, by encreasing ye action of ye Vessels in ye Uterus. When there is great ~~organism~~ of ye blood, we should not administer Astringents, before y^t is taken off

In a Hæmoptoe ye. use of Astringents is attended wth. very dubious effects. If they stop ye. hæmoptoe suddenly, they occasion various evils, ye. chief of wh. are, ye. by accumulating ye. blood in ye. Lungs, ye. hæmoptoe either returns wth. greater violence, or it suppurates & terminates in a Phthisis pulmonalis or consumption. We should therefore hardly ever give them ~~wh~~ during ye. paroxysm of ye. Hæmoptoe; but when ye. spitting of blood subsides, & there is no danger of an accumulation of blood in ye. Lungs, small doses of ye. weaker astringents are very proper to strengthen ye. relaxed tone of ye. Vessels & thus prevent ye. frequt. returns of ye. disease —

A critical hæmorrhage, wth. relieves ye. patient, should never be stopped by any artificial means, unless it threatens ye. life of ye. patient, in wh. case astringents may be given. But this is seldom necessary; for a person may lose almost an incredible quantity of blood on these occasions wtht. great prejudice, provided ~~it doe not~~ ye. hæmorrhage is not violent;

& there are Instances of persons losing 2 quarts of blood, & ye strength little impaired by it.

Of ye use of Astringents in Hemorrhages, externa lly applied.

Hemorrhages from Wounds may be stopped in two ways viz. by contracting ye mouths of ye Vessels, or by coagulating ye blood. Astringents are proper for either of these intentions. But they have no peculiar Virtue to recommend to us for this purpose. When small Vessels only are wounded dry Lint & pressure are generally sufficient, & if ~~large~~ any of ye large are hurt, ligatures are more certain, if we can apply them.

Of ye Use of Adstringents in ye Cure of Ulcers.

Some have imagined ~~that~~ there are remedies y^t will supply flesh & by y^t means be useful in ye cure of Ulcers. But this, merely an Fancion & not founded on expts. ~~But~~ Adstringents seem to be of use in Ulcers, but they act in a diff^t manner from ye above. In weak & relaxed habits ulcers are healed wth great difficulty. It is probable

y^t. Astringents by increasing y^e. strength & elasticity of ye fibres, occasion an inflamation w^h. is adquite to ye formation of pus; we are certain at least y^t. Astringents will quicken y^e. circulation.— The use of astringents in y^e. cure of Ulcers was not ~~unknown~~, until it was discovered y^t. y^e. Bark promoted suppuration in Ulcers as well as in ye Small pox. The Bark is mainly justly an astringent, & tho it has other qualities besides its astringency, it appears y^t. this virtue of promoting suppuration resides chiefly in its astringent parts, & Cartheuser says y^t. in Germany y^e. rad: Tormentilla is made use of for ye same purpose. The use of y^e. Bark in y^e. Small pox is now too well known to want any proof.— [Lecture y^e. 13th. December 9th. 1772]

Of y^e. Use of Astringents in Gangrene.

It is an well known fact y^t. Astringents do not only prevent putrescency from taking place; but even cure it. And therefore they are found to have ye same effects on y^e. human body, & y^e. peruvian Bark is now generally ~~applied~~ prescribed in Gangrenes, ~~both~~ & given both internally & applied externally

Of injecting Adstringents into ye. Abdomen for the cure of ye. Dropsy —

You know yt. by a Paracenthesis we can evacuate ye. Water contained in ye. Abdomen; but it is also as certain yt. this generally affords only a temporary relief. Some years ago an English Surgeon injected adstringent liquors into ye. Abdomen in order to strengthen ye. relaxed Ves[illegible] which ~~& thus preventing~~ with an intention to a new accumulation of W. But this practice is deservedly rejected. — For tho a relaxation of ye. Solids may sometimes be ye. cause of Dropsies, yet this Disease is oftner owing to diff. cause. For from dissections we learn yt. ye. Dropsy is often occasioned by a Scirrhus of ye. Liver or other tumors in ye. abdomen; & this at once furnishes us w. ye. reason for rejecting ye. above practice. If there are obstacles yt. prevent ye. free circulation of ye. fluids towards ye. heart ye. Disease will continue untill these are removed, nay we do strengthen ye. Vessels yt. convey ye. fluid, nay this practice will only accelerate ye. patients death, for Vessels must burst unless ~~if~~ a free circulation is ~~not~~ restored.

But allowing ye. dropsy were owing to a general debility of ye. System, yet ye. injecting of astringents into ye. abdomen cannot be of any service, for it is in vain to give strength to ye. Vessels in ye. abdomen, unless we give it to ye. whole System & take away ye. cause of ye. disease. In an Anasarca indeed depending on a relaxed state of ye. System Astringents given internally friction used externally & moderate Exercise are ye. proper methods of Cure; & it is almost only in this case that they should be ordered. They are rather hurtful than useful in a Hydrops, pectoris & encysted dropsies.

Of ye. Use of Astringents in Diarrhoeas & Dysenteries.

The Diarrhoea & Dysentery are Diseases wch. have hitherto been confounded & often taken for another. Indeed I scarcely know one Symptom by ~~which~~ wch. we can characterize the one, wch. does not sometimes occur in ye. other of these diseases. They are however diff. both in their Nature & Cure; ye. Diarrhoea is generally owing to refrigeration, as I observed when speaking of

ye. acid fruits; ye. Dysentery arises from putrid exhala-
tions, such as occur in Camps & marshy places, &
this is in my opinion ye. prospective way of distinguis-
shing them. In ye. Diarrhoea also ye. Stools are liquid
but generally of a natural colour, ie. Borborygmi &
Gripings. In ye. Dysentery ye. Stools are in smaller
quant not so copious, but frequent, slimy & frothy,
ie. Gripings & tenesmus. And it is to these Symptoms
owing to ye. Cause just mentioned ye. Principle confine-
ye. term of Dysentery. Sydenham & many other Author
of ye. best Authority assert ye. a fever always accompanies
a Dysentery, either immediately from ye. invasion of ye. dis-
or comes on soon after, & I think this a very just ob-
servation & one of ye. surest signs ye. distinguish ye.
Dysentery from a Diarrhoea. In both Diseases we
should either purge or Vomit ye. patient, & therefore all
stringents are not to be given before we have evacuated
ye. prima via. But for ye. purpose we generally order
some remedy ye. has somewhat of an astringency lodge
in it; ye. most common are Rhubarb & Specacuanha, of ie.
ye. former is most certainly possessed of an astringent quality

& is therefore doubly useful in y. Dysentery, as after it has evacuated y. Intestines it again addstringes & strengthens them. After y. peccant matter is thrown out of y. body the flux sometimes continues from a debility in y. Intestines, in wh. case moderate adstringents are extremely useful as they then take away y. cause of y. disease.

By y. Griping the body is much weakened, y. Intestines relaxed & their villous coat abraded, Pringle orders small but repeated doses of Ipecac: or Rhubarb combined wt. adstringents, wh. method he says is attended wt. very good effects. After y. prima via are well cleansed, & any blood is taken away if necessary, Astringents combined wt. Opium have a very happy effect in taking off y. griping y. often prove very troublesome.

Those who have laboured under a Dysentery are very subject to relapses; we should therefore in order to prevent them order some adstringents y. will strengthen y. System & in particular y. Intestines. The peruvian bark is generally made use of for this purpose; and it is to be observed y. we should never give y. strongest Astringents in these cases; but y. more vegetable ones, & these in small but repeated doses & continued for some time

Of ye. Use of Astringents in ye. Evacuations of Mucus, as, Gonorrhoea & fluor albus, & ye. manner of operation.

The use of Astringents ~~is by some called~~ in these disorders is called in question by some, & certain it is ye. it is not yet determined, wh. is ye. proper time of administering them in these complaints.

In ye. first stage of a Gonorrhoea, when there is an ardor Urine or Scalding, ye. Urethra inflamed, ~~bloodee~~ & for this a few we should bleed, give cooling remedies & abstain entirely from ye. use of astringents. There are however some who even at this time inject ye. Sacchar: Saturni one of ye. strongest astringents we have. But this practice should be left to Quacks & Mountebanks, whose ~~glory~~ chief merit consists in a foolish rashness. But when ye. Inflamation is in some measure ~~gone~~ abated & ye. running continues violent we may apply astringents. They are however even at ye. time to be used but sparingly especially as ye. disease by proper management may be cured w'out them — But if it should happen ye. when ye. Inflamation & ardor urine are gone, ye. running should still continue we may then w. safety order astringents, especially if we have given such remedies as seem as from

any danger of ye. venereal taint being carried into ye. blood. But In ye. case we should not however use astringent injections, unless their internal use is found to be insufficient. If demulcents & balsamics are found to be useless in an inveterate Gleet, we must then take to astringents & styptics. Astruc, ye. compleatest Writer on ye. venereal disease, informs us that when Mercury & other remedies failed he found a Powder composed of Alum, Vitriol, White lead & absorbent ~~powder~~ earths succeed. In this case he also orders astringent injections, but not w.out warning us to be on our guard —

Of ye. use of Astringents in ye. fluor albus —

The fluor albus or White is a disease w.h. seldom affects young women, but is not very uncommon in women ye. are somewhat advanced in Life, & have borne several children. It is one of ye. most difficult diseases to cure & frequently occasions Barrenness. I shall not here define it, as ye. would lead me to examine ye. various opinions of Authors, & I shall only say ye. Physicians are not yet agreed ~~about ye~~ how to define it.

If ye. disease has continued for a considerable time, we should be cautious how we stop it, ~~& I observed~~ observe

ye. same rules wch. I gave you when ~~treating~~ speaking of habitual
ye. use of Astringents in habitual hæmorrhages. We
should first endeavour to ascertain ye. cause of ye. flux,
whether it is seated only in ye. Uterus, or whether it
depends on a relaxation, weakness or some other accid.
of ye. whole System; & endeavour to correct this by
suitable meds. But if after a proper administration of
med. ye. disease is not removed we may then apply ad-
stringents, provided ye. uterus is neither swelled, inflam.
or ulcerated, to strengthen ye. relaxed tone of ye. Vessels.
But if ye. flux is owing to tumours & ulcerations in
ye. Uterus we must abstain from adstringents & use
some more proper remedies, of wh. ye. Cicuta or Hem-
lock is esteemed one — If ye. Disease has not
been of long standing, gentle Laxatives, combined wch. ad-
stringents, wch. strengthen ye. relaxed weakened Vessels, frequ.
ly remove it —.

I shall next enquire how Astringents excite & promote ye. Se-
tions & Evacuations of Blood.

We have hitherto been considering ye. use & manner of ope-
ration of Astringents in stopping all kinds of Evacuations

it may therefore appear somewhat strange ye. Astringents should in particular circumstances have a quite contrary effect, & ye. they should in one person prove laxative whilst they are binding in another; diminish ye. flux of blood in one case, & encrease it in another. And hence we have ~~ppt~~ptions of Steel in ye shops both under ye. title of aperient & adstringent, & yet there is in my opinion not ye least difference in ye. preparations, but yn. diffs. manner of operation should be accounted for from ye. diff. habit of body or other circumstances yt. influence ye. operation. If an evacuation stops because ye. whole body, or any particular part labours under debility, it is natural to suppose yt. by restoring ye strength of ye. parts we shall also restore ye. evacuation In ye. Chlorosis for instance, where ye. ~~Menses are~~ is a suppression of Menses from Languor & debility, exercise, good living and adstringents will restore ye. menstrual flux. If Costiveness depends on a weakened peristaltic motion or debility of ye. Intestines, astringents by exciting ye. one & curing ye. other will render ye. Belly regular. As often therefore as ye. diminution or suppression of any of ye. natural excretions depends on laxity or debility, Astringents & Exercise are ye. proper means to

cure y. disorder

Of y. use of Astringents in y. Gravel & Stone

It may at first sight seem strange y. Astringents should be of use in calculous complaints, but undeniable facts & experiments place it beyond all manner of doubt. And we should rather wonder, says y. learned Heucher, y. most Writers on y. Stone & Gravel have either entirely neglected, or very slightly mentioned y. use of Astringents in y. Disease, when we can show both from Theory & practice y. Astringents are of no small use & may be applied without any danger of bad consequences in Disorders of y. kind, & have often done great services where other med. have failed.

If Astringents do not expel calculous concretions, at least it is certain y. they mitigate y. pains & often cure them entirely. And De Haehn in his ratio Medendi tells us y. y. Uva ursi, which is one of y. strongest vegt. astringents, often mitigates & sometimes entirely takes off y. pain, the y. stone is neither changed in bulk or figure, as appears from recording to y. Catheter; And Heucher who has expressly wrote a treatise on y. subject shows from undoubted authorities y. from y. earliest ages untill y. times y. med. generally called Lithontripties have always been & acted as astringents. But as I shall have occasion to treat this subject more particularly when I come to speak

y. use
of Lime Water & Vva Ursi in y. Disease; I shall defer y.
remainder of what I have to say on y. subject untill they
I shall now in y. last place consider y. use of Astrin,
gents in Inflamations ——

Their use in y. 2d. case is very dubious & whilst they are recom,
mended by some, they are as obstinately condemned by others.
We shall therefore in few words just mention y. causes of In,
flamation, & from thence deduce y. use in them ~~cases~~
Inflamation ~~may be~~ is owing ~~to two causes: 1st.~~ an increased
action of y. Vessels, w.h. may be either owing to a too thick
consistence of ~~y~~ y. fluids; a straitness of y. Vessels, & to
internal stimulus. When y. blood is too thick it stagnates in y.
Vessels & causes Inflammation. This stagnation is owing
to two causes: It may arise from an increased impetus or force &
also from a weakened one. In y. former case Bleeding
& cooling remedies are required; in y. latter Astringents
by restoring y. proper tone to y. Vessels & enabling them
to propel y. fluids are y. proper remedies. The first
species of Inflamation generally occurs in y. young & vi,
gorous; y. latter in y. old & decrepid. By attending to
these two diff.t constitutions you may generally know
when Astringents are proper. In y. young & vigorous In,
flamation ~~frequ.ly~~ generally terminates in Suppuration, in

y. old Gangrenes are often y. consequence; the knowledge of this is another proof of y. propriety of Astringents in these cases. In ~~diseases~~ Inflammatory Eyes in young people y. antiphlogistic method is y. proper one; but in old people Astringents should be used. If you ~~have~~ consider these circumstances properly, you will generally be able to reconcile y. seemingly jarring opinions of authors on this subject. If a general fever accompanies inflamation we should first take off y. & if y. Inflamation still remains we may justly conclude it owing to a debility in y. Vessels & therefore apply Astringents —

I have now enumerated most Diseases in wh. Astringents may be of use. If I have omitted any they are however analogous to some of those I mentioned, & you may also apply what I have said to them —

Having thus established y. principal Virtues of Astringents in general & enumerated the particular Disorders in which y. Remedies ~~Astringents~~ are indicated we are next to treat of y. particular Substances that are chiefly employed as Astringents. They are divided into Fossile & Vegetable: Of Fossile Astringents we have 3 Classes: The Earthy, Saline & Metallic. —

Different kinds of Earth were formerly much employed in Medicine; but few are now ever made use of: those y. are may be distributed under 3 heads: Boles, Clays & Absorbent Earths. —

Boles were formerly much employed in Physick & recommended in various cases; but we may justly regard them as of little consequence, and entirely banish them from our prescriptions: For as they are not even soluble in acids, w.ut a particular process, they must be still less soluble in y. ~~humours~~ fluids of our body & can therefore be only productive of Mischief by ~~rema~~ remaining in y. Stomach for a considerable time & ~~dispo~~ causing a weight & oppression there: nay they have been accused & perhaps w.th propriety, of lodging in y. plica of y. Stomach & particularly of y. Intestines, and there occasioning Constipations or at least affording a Nucleus for y. formation of concretions. Some physicians employ them on the account of y. Iron & Aluminous quality ~~that~~ w.th which they are times impregnated; but this is no reason for their entering into our prescriptions; for whenever we want ~~any~~ y. Virtues of Iron or Alum, it is best to make use of such preparations of them, where we can ascertain the dose & be certain of the effects we mean to excite. There is still less propriety for their being employed along w.th other substances in Lycholetes, for which Physicians formerly recommended them, and in which Intention, they are ~~even~~ now at times employed, but upon y. most absurd & ridiculous foundation. They may be used externally as exsiccants to dry up excessive discharges of serum, where they will answer y. same purpose as any other dry powder.

Argillaceous Earths or Clays are distinguished from Absorbent Earths by not effervescing with Acids. Pure Clays have little or no effects as Medicines and tho they were formerly prescribed by Physicians from a supposed astringent quality, yet they are now never employed in ye intention. Absorbent Earths effervesce wt. Acids of all kinds and are therefore volatilized in ye acid always present in our stomach. They ~~still~~ continue to be prescribed from a supposition that they are possessed of an astringent quality. They are therefore still ordered by Physicians in Diarrhoeas & Dysenteries, and nothing is more common than to see Crabseyes & an infinite number of other absorbent powders given with this intention. When a Diarrhoea in children is owing to too great a quantity of acid in ye stomach, wch. we discover by ye green colour of ye stools we may give absorbents wt. propriety, for by neutralizing ye acid in ye stomach they in some measure remove ye cause of ye disease & will even freely act as diaphoretics & thus restoring ye determination of ye fluids to ye skin; but they will not even in this case act as astringents; but be attended with altogether contrary effects, until ye acid is subdued: we now frequently prescribe Crabseyes, Magnesia & other Absorbents on account of ye astringent quality whenever they meet wt. a sufficient quantity of acid in ye stomach, and yet we see

sometimes Physicians order them w. a quite contrary intention even in Dysentery. But they can never act as astringents when taken into y. Stomach. Dr Pringle hath discovered by his experiments that they are possessed of a septic quality, they are therefore particularly improper in Dysenteries, which are very often accompanied w. evident signs of putrescency; which must be further increased by y. administration of this kind of Medicines; and tho we should even allow that they would not be productive of such consequences, yet they cannot w. any propriety or upon any principle be employed in Disorders of this kind. Calcined Hartshorn is sometimes employed in y. decoction alluded to given in Dysenteries: my own experience will not warrant my giving an opinion about y. use of it: thus much however is certain y. it is a substance of difficult Solubility & probably of little or no advantage as a Medicine. — Chalk is sometimes substituted instead of y. calcined Hartshorn, but if it meets w. an acid in y. Stomach it will prove a Purgative & if there is little or none present in y. bowels, its effects must be very inconsiderable & ~~perhaps~~ probably pernicious. —

Saline Earths. Alum is y. principal & perhaps only one of these. It is formed by a combination of y. Vitriolic acid with a particular species of Clay, and it is from this Earth of Alum that y. Alum as we have it in the shops is extracted & prepared. We have the common & roman Alum, & whatever difference there may be between them w. regard to their use in y. art of dying, there is little or none as Medicines. When it is found native it is called Alumen plumosum

Alum is one of y. safest & at y. same time most powerful adstringents. As a saline substance it is very readily dissolved in the watery fluids of our body, its operation therefore is very quick & soon extended over the whole system; much sooner indeed than what we could suppose to happen, if it were to be carried to y. different parts of y. body by means of y. circulation. It acts more quickly & in a much smaller Dose than y. vegetable astringents, and as it is less stimulating it becomes of more general use than y. metallic astringents. It seems also like all other neutral & earthy Salts to have something of a sedative Virtue combined w. its adstringency, and is thereby extremely useful both in external & internal applications where the other adstringents are at least attended w. dubious effects: Thus it is frequently employed in Inflammations of y. Eyes: Inflammations of y. Eyes and indeed every other part are sometimes owing to an encreased Impetus of y. fluids occasioned by a stronger action of y. Solids: but they are also frequently owing to a diminished or weakened action of y. Solids, by which these are rendered insufficient & incapable to propel y. circulating fluids with Vigour. This kind of Inflammations generally take place in old people & persons who by frequent debauches have worn out their constitution: they require a treatment altogether different from what must be followed in Inflammations that are owing to an encreased action of the Solids, where the blood is either forced into unnatural places or y. Vessels become too distended by y. encreased Vigour of y. Vessels: Here y. antiphlogistic method & regimen are indicated. But when y. Inflammation is owing to an accumulation or congestion of blood in y. Vessels, occasioned by y. laxity & weakness of y. Solids, which are then incapable to propel y. circ

relaxing fluids, whatever gives strength & vigour to these will remedy the
disorder. — When they are however too much distended topical bleeding
cupping or leeches must be premised; least by y. sudden application of
strong astringents such an abrasion should take place as to endanger
rupture of y. Vessels. — In these kinds of Inflammations of the Eyes therefore
are apt as I just observed to affect old people and are owing to Debility
astringents are the proper Remedies, and of these Alum deserves pre-
-ference y. preference: The general method of using it is to rub a bit of
Alum in y. White of an Egg untill this is coagulated & becomes of a some
-what firm consistence; this is spread on a piece of fine linen &
laid on y. Eyes ~~of~~ over Night, which are in the Morning washed w.th a
little cold water. The White of y. Egg in this application is of no other
use but as it ~~gives~~ affords a proper substance through which we apply
the Alum to y. part affected. And you are further to observe y.
lower Inflammations are owing to Debility general bleeding
commonly pernicious; & the cure is to be performed by topical
bleeding & y. application of such remedies as will restore a proper
tone & strength to the Vessels — Alum is also a very proper & useful
remedy in relaxed & putrid Gums accompanying the Scurvy. It is in
this case commonly dissolved in an Infusion of Sage sweetened w.th a
little Honey; this is used as a Gargle & y. Gums & fauces and to be
frequently washed ~~with it~~ by holding a spoonful of this preparation in the Mouth
for a Minute or two at a time. It may also be employed w.th advantage
in an Angina or Inflammation of y. Throat arising from relaxation:
for this purpose Sydenham recommended the Vitriolic Acid; but Alum
seems much better calculated in Disorders of this kind, and acts not

only by correcting y. Laxity of the Vessels, but also by diminishing y. Imp
of y. fluids. Alum has also been applied Externally to dry up ex
tions of y. Skin, for Instance excessive sweating in y. Arm pits; b
this is for the reasons given in my last Lecture is a very precarious
Practice & often attended w. imminent danger. Alum is the
adstringent y. we may best depend upon in Violent Hemorhages, giv
internally and applied externally. — Bleedings at y. Nose are some
so violent as to threaten y. immediate dissolution of y. patient
In this case after we have employed the general method for y. cu
of hemorhages which I explained in my former Lecture, we can
make use of a more efficacious remedy than Alum. — For this
purpose we impregnate a Tent or Pipil with a sufficient quan
of y. powder of Alum & introduce it into y. Nostril from which y
blood issues, so as completely to fill y. Nostril, at y. same time raising y. head very high & applying a
Cloth moistened w. strong old Vinegar to y. forehead, Crown of y. head
each part of y. Neck. The Alum as I said before acts both as su
and adstringents; whereas y. metallic adstringents e.g. Vitriols all p
somewhat of a stimulating quality; and y. Mineral Acids cannot
applied in a concentrated state on account of their acrimony,
which they would destroy the very texture of the parts; & if
diluted would not be efficacious enough for y. purpose. Alum may
also be given internally for y. purpose of checking Hemorhages, when
these are so violent as to make us apprehensive of imm
danger; for I told you in my last Lecture that it is only in ca
of this kind that y. strong & powerfull Astringents should be employ
least we lay y. foundation for Disorders y. will at length destroy y. pa

Musa would perhaps be oftener employed for these purposes, were it not for ye Nausea it will sometimes excite notwithstanding all our care: Dr. Malouin however assures us that if a small quantity of Cinnabar be mixed w.th ye Alum it will prevent the Nausea; a trial only can determine the truth of this matter, and it is well worth ye experiment; but Helvetius's method appears to me extremely rational & well calculated to prevent this effect: He frequently combined a small quantity of Opium with ye Alum; by which he guarded against the Nausea; quieted ye Irritation & spasmodic affections ye generally accompany hemorrhages and gave time for ye Alum to exert its astringent Virtue. Alum has also been employed as an astringent in many other disorders. Dr Grashuis tells us that he frequently experienced its good effects in ye Colica Pictonum, by restoring ye tone of ye Intestines & rendering ye peristaltic motion regular. Dr. Thompson recommends it as a valuable Medicine in the fluor albus. Dr Cullen advises us to try it in ~~a~~ Diarrhoea & Dysenteries, where he expects it would act not only as an astringent but antiseptic, especially if given in small doses. Others assure us of its efficacy in intermittent fevers if given a short time before ye fit is expected combined with Aromatics. It has also been proposed for ye cure of continued fevers. ~~How far it may be proper in all or any of these disorders I am~~ I cannot from my own experience ~~I am~~ determine how far it may be proper in all or any of these disorders: and I confess I should not be forward to make ye experiment, unless I found the Medicines generally employed in these cases, ineffectual. I should then have no objections to its use; but I would feel some uneasiness in trying a doubtful remedy when there was no necessity.

Helvetius's preparation, for w.h he obtained a premium & pension from the the Kg. King of France, hath been particularly recommended in these cases: this is made by melting some Sanguis Draconis in an iron Ladle & mixing as much of y. powdered Alum with it as it will take up. The Sanguis Draconis hath no effects as an astringent & is insoluble in y. fluids of our body: it therefore serves no other purpose but as it affords a proper ~~menst~~ vehicle by which we reduce the Alum into Pills. — In the Pharmacopoea Pauperum of y. Edinburgh Infirmary y. terra Japonica is added & y. Alum reduced into a powder w.h it. But there is little or no reason for this addition; for as the Alum receives no additional Virtue from the Terra Japonica, there is no propriety in the composition. — The best way perhaps, and the method w.h I have invariably pursued is to give it in substance, formed into a Bolus w.h Conserve of Roses to conceal the taste from y. patient. It may then be given with good success in all internal hemorrhages particularly of y. Uterus. — We may give it in Doses of 10 or 15 grains according as y. symptoms are violent, and repeat them every hour or half hour. — Dr Thomson tells us in y. ed: med: Essays that he gave ~~2 drachms~~ every hour in violent hemorrhages; there are however few patients who can bear so large a dose at a time w.h sickness at y. Stomach & Vomiting; but by giving 10 or 15 grains ~~at every hour~~ every ½ hour the patient may take a considerable quantity without its being attended with those consequences. By this method we also gradually moderate the discharge instead of suppressing it at once, which is another very considerable advantage, as we thus in some measure prevent consequences of a total & sudden suppression

Metallic Astringents.

Copper. This metal is soluble in our fluids as well as in every saline substance. It may be combined & prepared either with acids, Alkalis or Neutral Salts. They are much y. same in Virtues. The ~~alk~~ combinations with alkaline Salts are in general y. most stimulating; y. preparations with neutral salts are y. mildest; y. composition of Copper w. y. muriatic acid is reckoned the most astringent ——. Copper is a very powerful stimulant, and will excite Vomiting even when taken in very small doses; this effect indeed so generally attends y. use of preparations of Copper, that we are very often obliged to refrain from its use, tho we should be ever so much inclined to prescribe it. As y. preparations w. neutral Salts are y. mildest & least apt to be attended with stimulating effects, we ought universally to give them y. preference. From its stimulating effects however it hath obtained great repute for y. cure of Dropsies: It acts both as a purgative & diuretic, and may perhaps also be of singular service in these cases by its astringency; strengthening y. relaxed tone of y. Vessels after y. evacuation of y. Serum. On account of its astringent virtue it is sometimes employed to check Hemorrhages or other Evacuations; but we can seldom employ it internally in this intention on account of its stimulating quality. Proper Dried is however sometimes made use of in external applications to check y. effusion of blood, and ~~in~~ these cases acts not only as an astringent by contracting y. orifices of the blood Vessels, but hath also in some measure the power of coagulating y. fluids w. w. it comes in immediate contact

The celebrated Mr. Boyle hath particularly recommended the Ens Veneris for ye purpose of stopping Evacuations: Physicians have however since his time been more engaged in disputing about ye composition of ye Ens Veneris than in making trials of its efficacy. Some have contended for its being a preparation of Iron: Boyle himself tells us positively it is a preparation of Copper, of which there is no doubt; for no Preparation of Iron will produce the same effects that we can bring on by ardus Sensis of Copper. The best method of preparing Copper for inwd use is described in the first Volume of ye Acta Naturæ Curiosorum: and is simply this: dissolve any quantity of roman Vitriol in distilled Rain Water; to this solution add as much strong Spirit of Salt Ammoniac prepared w. Salt of Tartar or Lime as will saturate the solution: after it hath stood for some time add as much very highly rectified Spt. of Wine, until no further precipitation takes place: At ye bottom of the Vessel there will be small elegant Sapphire coloured crystals; separate the Water from them by means of brown Paper & having dried ye Crystals well preserve them in a Glass well corked to prevent the air from getting to them. In this preparation we have ye Copper combined w. a neutral Salt ~~without~~ free from ye muriatic acid: acting as a very powerful astringent, taking off ye mobility of ye nervous System & therefore a proper medicine where a universal relaxation hath taken place e.g. in ye Rickets: it is also highly antispasmodic & therefore recommended against ~~by~~ Mania & Epilepsy by Antonius Leirman & particularly ye late celebrated Van Swieten. The Dose is from one grain to five; beginning at ye smallest & increasing it from time to time as ye patient can bear it: For when this preparation will

Alexander Durie aged 36 is subject to fits w.h attack him suddenly w.out any previous Notice, some think y. a day or two before their approach his eyes look more unusual. Immediately on their attack he becomes senseless & falls down, Limbs and body are convulsed; he foams at y. mouth; after a time he recovers a little & falls into a sleep immediately. It attacks him at the interval of 3 Weeks, a Month or more w.out any regularity. He hath generally several in succession at these periods. It is now 20 Months since they first attacked him; he had at y. time been married but seven Months. Hath been in y. Hospital 6 Weeks & found chiefly Vomits & purgatives, but w.out advantage ——

Nov. 29. Ex. Ammon: Cupri gr.j bini: Nor. y. s. affect Bol. & be taken Med. time.

30. Bolus hath not affected his Stomach. Rep: cum Amm: Cupri gr.ij

Decbr. 1. Bolus repetat. c. gr.ij. Dec. 2. Had no sickness or Vomiting w.h his Bolus last Night. Complains of Wind in his Bowels & some Headach. His Belly is open. Rep. Bol. & Ammon: c. gr.iv.

Dec. 3. Hath been sick vomited & purged pretty since he took y. bolus last Night. Repeat it w.h only 3 grains of Ammon: Cupri.

4. Bolus did not affect him last Night. Repeat it w.h gr.iv & Night.

5. Affected him a little last Night. from 6 — 9 Cont. Med. He perceives no difference from y. bolus. Cont. w.h gr.iv. D. 10. Was sick w.h y. bolus last Night but it neither vomited or purged him. Repeat it again — from 10 — 13. from y. 13 to y. 24 Repeated it & omitted it alternately every other Morn. It neither makes him sick or vomits him; keeps his body regular and having had rests for 6 Weeks he was dismissed w.h 6 drams of y. Medicine. Had continued free for 12 Months.

In the 6th Volume of y. ed: Med: Commentaries I find that y. cuprum ammoniaci hath preserved its reputation & continues to be used in y. epilepsy: A case is there related of its proving successful in curing this disease

occasion Nausea & Vomiting: the following case of a person out of several who was cured of y. Epilepsy by this remedy, will serve to shew you in what quantity it ought to be given & y. manner of its operation. I give it to you from y. Notes which I took daily in the Infirmary of Edinburgh, when I was myself all Ears of y. Case:

From this case you see that it is a Medicine worth making y. appt. w. in this disorder, which is one of the most terrible & distressing y. attack the human Species. It may be owing to a Variety of causes & often require different methods of treatment, which we can indeed rightly only guess at, as the Nervous System seems to be particularly y. seat of y. disease, the nature of which we have but a very imperfect Idea.

Boyle hath also recommended y. Int. Venenis as an Anodyne; he tells us that it acts w.out producing y. inflammatory Symptoms & redness on often y. consequence of Opium. But if you consider the Virtues & qualities which I told you Opium possessed, you cannot be at a loss to know what saith Mr. Boyles assertion deserves. — We often indeed find great Men give into very considerable errors: A Medicine may be given at a time when the disorder is just overcome by y. powers of Nature, & y. physician is fond of attributing y. cure to his Medicine, when in fact it had at y. least share in it: he from that time considers it as a sovereign remedy in similar cases, and tho it fails three times out of four, he never suspects y. inefficacy of y. remedy, but always attributes it to y. malignity of the disease, and still benefits in y. cure of his medicine. Sometimes it happens that a physician cannot know y. cause of the disorder, he tries various means to effect a Cure, among many he attributes y. cure to one, tho he is himself unable to account for it: he ever afterwards attributes Virtues to a Medicine which it never

deceived, and impose on himself & others, without at ye same time intending either; but is fully convinced in his own mind, that his observation is well founded. — The only method by which we can discover falla-cies in ye minds ourselves & others is to examine whether ye effect in these cases corresponds to ye well known Virtues & qualities of ye Medicine. I always suspect ye cure to be owing to Medicines when I cannot account for their operation; and tho I would not deny that even Copper may ~~for~~ accidentally prove an anodyne by acting in a particular instance as an antispasmodic, yet it would be highly improper from thence to infer that its effects as an anodyne were by any means to equal to Opium. — Boyle also experienced ye good effects of ye Lac Veneris in petechial fevers accompanied w. a pulsatillatis tendinum: It must however also in these cases be attended w. doubtful effects & in my opinion should only be used when Medicines usually efficacious in those disorders, prove ineffectual: When this happens we should have recourse to any substance that promises relief. Any of ye Preparations of Copper applied to Worms out of ye body destroys them instantaneously, and would no doubt produce the same effect on them in ye body if we could conveniently give it internally. But this on acct of its Stimulating quality is ~~not~~ to impossible: it hath been found ye single drop of a solution of Copper in Volatile Alkali hath occasioned child to vomit. If any of ye Preparations have a chance to be retained on the Stomach of children ~~for~~ ye purpose of destroying Worms it must undoubtedly be the Cuprum Ammoniacum which I described in ye first note. — The common blue Vitriol hath within these few years been employed in ye Hospitals of London for ye cure

* Emetics of roman Vitriol are in repute with some Physicians, particularly in affections of the Throat. Some have recommended them in y. putrid sore throat; but I cannot well conceive on what principle they have employed them in these cases; unless they have mistaken the Angina scarlatina for y. ~~putrid~~ Angina maligna; and if they have, or consider the two diseases of the same nature & treat them on the same principles, their patients are to be pitied. In the Angina scarlatina, that species of sore throat so lately prevailed, ~~the~~ still continues, in this City, emetics of roman Vitriol may have some effect in stimulating y. glands ~~of the~~ of the throat & fauces & thus promote a free secretion of Mucus; but if we intend this effect, it is certainly better effected by mercurial emetics & particularly the Turbith mineral

Intermittents: it is given from half a grain to a grain or more at a time according as the stomach can bear it, & is frequently attended w.th good success in preventing y.e return of y.e paroxysms. Copper is also highly used in Germany to prevent y.e Hydrophobia from y.e bite of a mad dog. An experienced physician at Copenhagen informed me that he knew several people who used it & assured him they had been bit by mad dogs & felt not the least inconvenience from or bad effects from y.e bite. The general mode of y.e filings of copper was on buttered bread. This I should scarce have mentioned this matter but that it is confirmed by Dr. Cothenius, president of y.e College of physicians at Berlin, who prescribes ℞ y.e filings of copper reduced into a fine powder at ℥ss for a dose where people have been bit by mad dogs, & he assures us that it is an efficacious medicine in preventing y.e symptoms consequent upon y.e bite. And I have no doubt of this Gentleman's veracity or candour; the only thing y.e could make his assertions unequivocally useful would be to know with certainty that y.e persons who applied to him for relief were really injured by y.e dogs y.e were really not only thought to be so. — We know that persons are sometimes when they are bit by a dog, apprehensive of his being mad; that they use every method w.ch can guard them against y.e canine madness, when upon proper enquiry it is afterwards discovered that the dog was vicious & still hath no symptoms of madness. It is very probable that Dr. Mead was thus imposed upon when he recommended his powder against canine madness as a specific cure against this disorder; which I believe never gave any relief in a real canine madness. — Copper however appears to promise relief in this disorder, which when it once comes on is certainly of a spasmodic nature & attended w.th very violent convulsions. I had an opportunity of observing the whole course of it in a

a girl about 8 years old ~~after~~ when ye symptoms of ye hydrophobia were just coming on, who expired in a few days notwithstanding every assistance ye edinburgh Physicians could afford her. She had frightful strong spasms & convulsions in diff.t parts of her body, wch became so violent as to throw her out of bed when water was put to her lips. It is therefore probable that a medicine of an astringent nature & at ye same time antispasmodic may prevent the coming on of the hydrophobia. It will at least deserve a trial, as every other medicine hitherto applied for ye purpose hath ~~not~~ frequently failed of being effectual; if we except perhaps Mercury; of which we shall speak in its proper place. Preparations of Copper and also employed in external ulcers, and by stimulating they bring on ye dyne of inflammation which favours ye generation of good pus. The Ancients employed it commonly as a dijective & escharotic for ulcers; but it hath been much disused since Mercury hath been introduced into common practice. There may however occur cases in wch Copper is more useful than Mercury, and other metallic substances may be applicable in particular cases, where either of them are attended wth disadvantage. Of this Dr Cullen ~~gives~~ gives an instance. He says that some years ago a disorder appeared in Scotland wth excoriations in the mouth & fauces; with ulcers in ye tongue, about ye gums & in diff.t parts of ye body resembling in some ~~measure~~ respects ye venereal disease; but distinguished from it by ye diff.t sloughs of ye ulcers, their pinnated appearance, and its not infecting persons after cohabitation. After Mercury had been tried to no purpose, copper was employed wth advantage. From ye description this gives of this disorder it bears marks of a strong resemblance to what we in the southern parts of this country know under the Term of Yaws, which some physicians have likewise at times observed to be aggravated by ye use of Mercury. A solution of Verdigrease applied to the tongue readily cured the ulcers in those parts

by bringing on a good suppuration; but as it was applied w.th more difficulty to y.e tonsils, there were also longer in healing. Whenever therefore we have a difficult & tedious ulcer under our care, we should never give up all hope untill we have experienced the effects of Opper. The preparations we commonly made use of, and which very well answer y.e purpose are the Mel Aegyptiacum & Aegyptiacum. I would however advise you never to be too free with the application of escharotics and caustics in wounds & ulcers. The powders we generally applied for this purpose are roman Vitriol, burnt alum, white & red precipitate &c. These are made use of to take away proud flesh that grows up in wounds & sores, but often do more harm than good, by converting a sore of a good quality into a bad ulcer. I have known Surgeons of very extensive practice who assured me they very seldom made use of applications of this kind, and when they were under a necessity of doing it, they applied them chiefly to the lips of y.e wound & seldom into y.e middle of it. For if y.e flesh is taken away by y.e kind of substances as soon as it begins to granulate, the wound must be a very long time in healing & will often degenerate into very bad ulcers. The most proper imitation we give a wound either by probing it frequently or by applications of this kind the longer it will be in healing, and y.e fewer medicated substances we apply the better. But in an ulcer of a bad quality a little of y.e mel aegyptiacum will be attended w.th good effects. I have also known it of service where a mortification was to be apprehended, by stimulating y.e vessels & solids, ~~recalling them to separate~~ bringing on a proper degree of Inflammation & thus producing a separation of y.e unsound parts from the sound. With regard to the doses of Opper to be given internally, we have only to observe, that it is impossible to lay down any certain rules: a very small quantity will vomit some persons: we must therefore always begin w.th y.e smallest doses & encrease them gradually as y.e stomach can bear them

Iron is more frequently employed in Medicine than any of the other Metals. It may be combined with most saline substances & is soluble in every kind of Acid. The Vegt. acid however only considers it, to it extracts all its medical Virtues; it may therefore be given in substance as ye. Virtues of it may be extracted by ye. acid in ye. prima Via; this however must always be attended to. Uncertainty, as its action will in this case depend on ye. quantity of acid it meets with in the Stomach, & if we should give it when there was not a sufficient quantity of acid, it might be productive of inconveniencies merely from its weight & mechanical action. To guard against this we may always give some preparation or other; it matters not much wh. preparation we make use of, for they correspond altogether in Virtues, and ye. only choice regards their convenience or elegance. Formerly indeed Physicians were of opinion that diffr. preparations of Iron possessed different Virtues & therefore designed them by diffr. Names eg. Tinctura Martis aperitiva & Tr. Martis adstringens. No such difference however takes place & I explained to you in my last Lecture how ye. same adstringent Medicine may at one time increase the secretion & excretion of Serum & blood, and at another time check or suppress them; & that we must account for it from ye. habit of ye. body. If an Hemorrhage for instance is owing to debility, whatever gives tone or strength to the parts will check the discharge: & if a suppression of the Menses, or any of the other natural excretions be occasioned by relaxation & relaxation of ye. organ or system in general; whatever adds strength to them & increases ye. action of the solids and impetus of the fluids will tend to restore the natural secretion. But this effect is not to be attributed to ye. diffr. preparations of Iron, for they all possess similar Virtues.

When we want Iron in a powder Lemery's method for this purpose is the best, tho somewhat tedious. Here we let Water about an Inch deep above ye filings of Iron digest, shaking the Vessel from time to time; by which means part will be converted into a fine black powder, & by continuing ye operation we may get any quantity we please. Iron combined w.th ye Acid of Sea salt gives us the Tinct. Martis of ye Shops, w.ch may be applied in every case when Iron is indicated. It dissolves in highly rectified Spt. of Wine, forming a kind of deliquified Spt. of Salt of a very agreeable flavour. On keeping part of the Iron subsides to the bottom, w.ch makes ye dose uncertain & for w.ch reason we must make an allowance when we prescribe it. — Iron is a pure adstringent; it possess neither the stimulating qualities of Copper, nor is it attended w.th ye sedative effects of Lead. But then it is inferior as an adstringent to the one & not so powerful an antispasmodic as the other. Iron is indicated in all cases of Lassitude & debility & in obstructions & sluggishness owing to this cause. It is however necessary ye we should give it in small Doses from ye beginning, lest its effects should be too sudden & violent. We frequently experience effects from mineral Waters which no other preparations of Iron will produce, & this seems to be in a great measure owing to the weakness of ye impregnation & ye quantity of Water accompanying it. By which they act both as a diluent stimulant & adstringent; diluting & attenuating the Lymph & stagnating humours; gently stimulating ye Vessels to a more vigorous action by w.ch obstructions are both removed & prevented, and giving them strength to propel their fluids properly & not suffering them to form obstructions from debilitaty of ye different Organs. — Iron is also employed as an antispasmodic, not during ye paroxysms of spasmodic & convulsive Disorders, but to prevent their return by taking off the sensibility & irritability on which these Diseases usually depend.

It is therefore chiefly indicated in ye Hysteric, when it is a most excellent remedy & never fails of being attended wt. advantage, unless there are at the same time obstructions formed in some of ye Viscera, which is by no means an uncommon case. For this reason I always in my own practice combine the prepared steel wt. Magnesia; the latter forms wt. the acid in ye Stomach an earthy Salt, which hath still ye power of dissolving the Iron, wh. is then rendered less Stimulating, and ye Salt formed by this means acts as a Solvent & deobstruent; and I can from my own experience affirm that this Seption often produces effects and is attended wt. success beyond any other method of taking chalybeate Medicines, except ye mineral Waters. We may also in these cases combine the Iron with Bitters & aromatics & sometimes this composition will be attended wt. Success when other Septions of Iron fail; it seems particularly calculated in a very relaxed & weakened tone of the Stomach, when somewhat a quicker Stimulus is required than ye Iron of itself possesses. When we give the Iron in relaxed habits & mean to continue it for a considerable length of time, perhaps ye easiest method of taking it is to infuse the Iron in Cyder or an acid Wine & taking a table spoonful full of the Infusion twice or thrice a day. Iron hath also been recommended for ye cure of ye Hypochondriac disease; but this is a disorder frequently accompanied wt. rigidity & obstructions, for which Iron does not seem the proper Remedy & the generality of Physicians indeed confound ye Hysteric & Hypochondriac disorder, and treat them much in the same manner. It sometimes happens that these two disorders are combined in ye same person, but this is not always ye case, and there is as much difference between the Hysteric & Hypochondriac disease as there is between a Flowing & Intermittent.

The hysteric disease is distinguished by a laxity of y. Solids, flatulencies w.
a disordered state of y. bowels frequ.ly attended w. loose stools; generally attacks
Women & Persons of great sensibility & irritability; is purely spasmodic,
occurs at every period of life, and is commonly relieved in y. Winter
by y. cold weather. Hence persons inhabiting northern climates are
not so subject to it as those who inhabit the southern. The hypochon-
driac disease again is often accompanied with a rigidity of the solids;
flatulencies attended with costiveness & obstructions in the viscera;
highly attacks persons of a melancholic temperament; is sometimes
attended w. spasms in y. bowels, ~~but~~ is seldom purely spasmodic.
but generally afflicts people in y. decline of life, and persons inhabiting
the southern climates are not so subject to it as those who dwell
in the northern countrys. From this short sketch of y.e two disorders you
may easily perceive that they are altogether of a diff.t nature & must
of course require a very diff.t method of treatment; and unlss a physician
pays a very strict attention to y. nature of these disorders he will frequ.ly
produce mischief. — And if he prescribes Septions of Iron indiscriminately
for persons labouring under y. hypochondriac disease he may occasion
bad consequences. — I mentioned to you that the two disorders sometimes
occur in the same person, w.h is distinguished by particular symptoms
& then may be treated, under proper limitations, w.h Iron & other Med.l ~~Spirit~~
Preparations of Iron have also been employed for y. cure of Intermittent
Fevers. Dr. Hall & his followers considered a fever as a salutary effort of
nature to throw ~~off~~ some morbid matter out of y. body & therefore contended
that it should not be interrupted by y. Peruvian bark or any other Medicine
that had a tendency to put a stop to it. They therefore made

I omitted taking notice of the vermifuge quality of Iron — It hath been found that all ye preparations of Iron are effectual to destroy Worms — The Chalybs pptt are frequently given in that intention & I have occasionally ordered it in that view but on repeated trials I have found the Sal martis superior to that & almost every other substance usually employed in the complaint — I now scarce prescribe any other medicine for the purpose. It is not indeed so quick in producing these effects as the different preparations of Mercury; but it is equally certain, and is not liable to the exceptions that repeated doses of Mercury undoubtedly are. It likewise strengthens the stomach & bowels; by which means it is very effectual in preventing the future generation of Worms; for you will hereafter find that weakened digestive organs are the most frequent cause of ye generation of Worms. — I give it for commonly in doses from 2 grains to five at a dose mixed in Melasses & Syrup, not only with a view of covering ye taste, but as sweet substances are ~~antidote~~ destructive to worms; & we should always endeavour to ~~use~~ administer our Medecines in such vehicles as contribute to ye principal indication. — I order the medecine to be continued for some time, and I do not recollect of being disappointed in my expectations in a single instance where this medecine was properly taken, in several cases there was scarce room to hope for a favourable termination of ye disease which ye worms had occasioned. —

e of a very subtile crocus of Martis, without considering ye. it acted entirely as an
ringent & in ye same manner as ye. bark. Iron is employed to particular
vantage in chlorosis & a suppression of ye. Menses owing to this cause. Ye
s owing to this cause or to relaxation. For an obstruction of ye. Menses
sometimes owing to a rigidity of ye System or Vessels in ye. Uterus & sometimes
to a spasmodic constriction in that organ; in either of these similar cases
efore, Iron would be a very improper remedy. It may be in general terms
d that chalybeate Medicines are proper in weak relaxed habits & in those
orders ye. indowing or accompanied w. this disposition: e.g. Chlorosis, Dropsy, Cachexy
modic appetites of ye. stomach, Epilepsies & Convulsions &c. They are hurtful in inflammatory
orders & wherever there is too much rigidity or an increased action of ye.
Arteries. Therefore in a Hæmoptysis & Hæmorrhages owing to this cause.
ther in obstructions of ye. Viscera, where if given freely it may produce
upture of ye. Vessels by its astringent & stimulating quality. It is also
tful where there is a disposition to putrescency, for by absorbing ye. acid
. is already in too small a quantity in ye. stomach, it increases that disposi-
tion. Neither should it be prescribed in a phthisical habit, for as
increases ye. action of ye. heart & Arteries, quickens ye. circulation, it
always accompanied w. some degree of fever & may occasion a rupture of ye. blood Vessels in the Lungs. For the same reason it should
t be prescribed for persons of a very plethoric habit of body: neither should
be given to persons ~~of a~~ subject to bilious disorders, except in small doses and
eatly diluted, but not during the paroxysm. Neither should we prescribe
it in a Diseases of the Lungs or any of the Viscera, unless in a diluted form.
our patient cannot have ye. ~~opportunity~~ advantage of mineral Waters, we may dissolve four
ive grains of Sal Martis in a couple quarts of Water & they make an artificial
min. Water; and during ye. use of chalybeate med. ye persons should always be exposed mod. Exercise.

The Sal Martis is likewise an effectual remedy in a relaxation of the Stomach & consequent indigestion & flatulencies, which frequently give rise to very painful & frequent attacks of the Colic. — I have experienced ye good effects of it in several cases of this kind & relieved persons of this disorder who had been long subject to it & tried both variety of Physic & Physicians. In these cases I generally order it in ~~Pills~~ doses of two grains, made into pills with Castile Soap & occasionally add a small quantity of Rhubarb. — You no doubt know that all ye different preparations of Iron give a dark or black colour to the alvine faces, particularly if they exert the proper effect —

Lead is only used in Medecine when combined with other substances. The calx of Lead eg. Litharge or red Lead united with oil forms the Emplastrum commune, which is y. foundation of most other plaisters & in which Lead answers no other purpose then that of giving a proper consistence. It is only active when united w. diff. kinds of acids; but for y. purposes of Medecine we generally make use of y. Vegetable acid, which gives us several preparations y. are at times employed as remedies. —— The first is the Acetum Litharygrii prepared in the manner of Mr. Goulard, a Surgeon of Montpellier, & which is the principal Ingredient in y. Bougies y. go under his name, & of which this is the method of preparing them, and by which we cure the obstinate disorders of y. Urethra y. are frequently y. consequence of y. Gonorrhoea. You are to take as many pounds of Litharage as pints of good Wine Vinegar, which are to be boiled for y. space of an hour over a gentle fire during which it is to be continually agitated or stirred w. a wooden spatula: after taking it from y. fire we set it by to cool & y. clear liquor is to be gently poured off from y. Sediment that is deposited on y. bottom of y. Vessel, and kept in well secured Bottles. A half an ounce of this liquor is to be added to one pound of melted Wax & intimately incorporated with it by continuall agitation. When y. union is perfect we cut into it pieces of linen cut in y. Shape of a tongue, roll them up in y. form of y. Bougies generally have, w. are to be committed into the Urethra. In y. preparing them several circumstances are to be observed: The linen should be fine holland properly extended, and to be immersed very gradually into y. preparation which should be neither hot or cold; it must also be taken

his disorder; & perhaps castoreil is of more use by its oily than purgative quality. From this fact also we learn that ye. best Preservative against ye. dry belly ach for Persons and Artificers employed in ye. preparing & of Metals, colours, painting &c. is to eat a sufficient quantity of oil & butter with bread and make use of fat broths & Meats. — The next stable adstringent is Zinc, which is a substance very little know in Medicine. Van Helmon recommends flowers of Zinc w. marcum as an adstringent application in weakness of ye. Eyes. They are particularly recommended in cases where the Skin is hurt by friction: a little of them mixed w. a small portion of water & applied on fine linnen to ye. part. In chronic diseases it is common for ye. patient to have become sore in diff. parts of ye. body. This may be known by ye. red spots ye. precede ye. loss of Skin. The flowers of Zinc applied in the manner just mentioned will frequently prevent ye. Skin from breaking. Children & fat people are likewise apt to become sore, for w. this application generally affords a speedy relief. The Lapis Calaminaris & Tutty are frequent Ingredients in plaisters and Ointments; for w. they give consistence and in some measure correct the unctuosity. But as for Virtues they possess none; for they give no Impregnation upon being boiled w. water, and shew no Virtues on being combined w. Vinegar. — White Vitriol is a Combination of Zinc & ye. Vitriolic acid: it is applied externally in Hemorrhages; also in inflammations of ye. Eyes; and a weak solution of it is recommended in Gonorrhoea after the inflammation is gone off, to check ye. discharge of Mucus from ye. Urethra. The Oil Vitriolic, or wm. white Vitriol, is recommended as an emetic, when poison hath been swallowed, for and is said to be quicker in operating than any ye. common Emetics. The dose is half a drachm

Flowers of Zinc. I shall first deliver you the history of this
medicine as it is given in y. Ed. Medical Commentaries;
periodical publication that was begun by a Society of physi-
cians in Edinburgh, near two years ago, & hath continued since
to be published every 3 months. As few of you have ~~perhaps had~~ had
an opportunity of seeing it, I shall on this occasion
give you an extract from y. performance; as you will
then be acquainted with y. Origin & Success of this Medicine.
It appears that flowers of Zinc had been first used internally by
Wylaubber, but were not employed by any person after him, till
y. Laubius discovered them to be y. remedy employed by a
famous Empiric, of y. Name of Ludemannus, under y. title of
Lana fixata; upon which he exhibited them with success,
in y. cure of convulsive & spasmodic diseases. — Dr Hart,
taking a degree in Medicine at Leyden chose y. flowers
of Zinc for y. Subject of his Dissertation, & in it gives us
several Cases & experiments made with this Medicine by
himself & others. — The first Case he relates is that of a girl 17 years
of age, who from a fright was seized with convulsive & spasmodic
contractions, which were succeeded by tremors of her whole body, par-
ticularly y. inferior extremities. On the sixth day after the
beginning of this complaint, she was put upon y. flowers of
Zinc, four grains of which were divided into 6 powders; of
which she took 3 every day. From using them her

symptoms were considerably diminished, without any uneasiness being produced. This success encouraged Dr. Vandeveeren who treated the case, to increase ye. dose. To two drachms of sugar finely powdered he added twelve grains of ye. flowers of Zinc & had it divided into as many powders. Three of these were ordered to be taken every day; and by ye. time they were finished, her complaints were entirely gone. Some Months after this patient, from a sudden fright, was again seized w.th. her former complaints; but upon taking 12 grains of ye. flowers of Zinc divided into 10 powders, they were perfectly removed.

Dr. Gaubius hath ye. case of a boy about four years of age, who laboured under a real epilepsy, suspected to be hereditary; his grandfather was much affected with that disease, & three children of the same family had died of it. After many other remedies had been tried in vain, Dr. Gaubius ordered him flowers of Zinc; these he took to ye. quantity of gr.j. twice a day; & from ye. use of them was perfectly recovered. Another case by Dr. Gaubius is that of a Man about 50 years of age, who from a high degree of vexation, was thrown into such violent convulsions as to be threatned with immediate suffocation. Upon a vein being opened & other remedies diminished, the fit at that time went off; but in about two weeks after it returned with as great violence as before, attacked him even twice in one Night. To this patient, a vein of ye. flowers of Zinc was given every 2 hours; after this had no return of his fits. Dr. Gaubius further observes, ye.

By some late accounts in the same Commentaries of Zinc the Zinc still continues to be used, & with the same good success that was formerly remarked from it. — I find particularly that in a case of a convulsive cough it was attended with remarkable good effects, as a few doses of the Zinc entirely removed it, after it had continued violent and obstinate for a considerable length of time. — There is likewise related the case of a Hiranosos, a species of convulsive disease that had proved very refractory and in which all the class of nervous medicines were repeatedly tried, Musk, opium, Camphor, castor, Valerian, Bark, Shelpe, cold & warm bathing — a Ptyalism was raised with Calomel without any effect; issues were cut in both legs & arms, blisters alone gave relief, & that only for a short time, during the serous discharge. — She was at length perfectly relieved by the Zinc, which she took at a grain for a dose, at first, but twice in a day, but increased by degrees untill she took nine grains — I have myself tried it in a variety of cases, but I am sorry to add, that my expectations were disappointed in every instance, but one. This was the case of a young woman at the penitentiary, afflicted with hysteric convulsions, for which a variety of remedies had been prescribed by the different Physicians of that Institution, but to no purpose. I at length ordered the flowers of Zinc for her, and after continuing them for some weeks, she was discharged cured, & I have hear-

e with the flowers of Zinc in cases of chincough, of hysteric hic-
cough, & of y. spasmus cynicus. He adds y. they frequently
ed more than any other medicine; but that they were
y no means successful in every case. A Woman
2 years of age, was, from a fright, seized with convulsions &
tremors, attacking different parts of her body. After trying
his remedies in vain, recourse was had to the flowers of
Zinc. Of this remedy she took 5 grains a day in doses of
ne grain each. From y. time she ~~took~~ began y. medicine, her
nvulsions gradually diminished & in four days ceased entirely
still however she was affected with headach, tho' less violent
an before; & upon continuing y. medicine a few days
nger, this also entirely ceased. — Many more cases are
umerated by y. same gentleman of y. use of this medicine
n complaints of this nature: Experiments have also been
ade with it in Edinburgh & other parts of Scotland, where similar
ects have attended its use. — Mr. Bell, a surgeon of Edinburgh
ributed y. flowers of Zinc to a Man who had been ten years
flicted with epileptic fits, and at last became so frequent y.
e was seldom 24 hours free from this attack: his Memory
Judgment were so much impaired by y. disease, that he could
ne answer any question directly; he likewise lost y. use
his lower extremities. By the use of this remedy, his fits
re mitigated, his Memory as well as judgment were in a
eat measure restored, & he also greatly recovered the use of his limbs.

But as the Medicine did not relieve him entirely of y.
disease; it was discontinued & he soon became as bad
as ever. — I have indeed ~~th~~ observed the same thing to
happen with the Zinc, as frequently takes place with
a new remedy ~~is tried~~ employed in any disease; it at first
seems to produce such effects on the system as give
expectations of proving effectual in relieving the dis
but the subsequent effects do not correspond with
first; whether this be owing to the system becoming
familiar with the medicine, or to some other cau
is not to be discussed at this time.

The third case was that of a woman in the Penny
hospital, who had been for a considerable time subject
to a hysteric epilepsy & had tried a variety of
remedies to no purpose; but was at length perfectly
relieved by the Zinc. —
nothing further of her. — And tho this Medicine has fail
in every other case in which I tried it, this will by no mean
discourage me from having recourse to it on future occasions,
as these cases have ~~been~~ hitherto resisted every other medic
that hath been prescribed for them, and have as yet
proved incurable. —

I have exhibited this Medicine in four Cases. — The first was a Gentleman from y. Westindies, who about five years ago had an apoplectic fit, which left him paralytic on one side, & he had ever since that time been subject to strong epileptic fits, that returned periodically every Month. As this was a complicated case, it required Medicines suited for each indication; he took y. Tinc along with them, & hath ~~to~~ not had a return of his fits for 6 months. The second is the case of Joseph Russell ~~who still remains in the~~ in y. Penny Hospital. When first took y. Tinc, he had been subject to the epileptic fits 4 or 5 years: at y. time they returned once a fortnight, then he had several, which left him stupid & totally deprived for several days of his reason. — After taking y. Tinc they returned but once a Week, & he became sensible ~~[illegible]~~ after y. fit ~~left him~~ left him. * The third is the case of a Child ~~which had~~

I have no doubt myself but what y. Tinc in y. four Cases I have mentioned under my own observation hath been attended with very good effects & I flatter myself will likewise relieve y. Child perfectly from this terrible Disease —

Epilepsys may be owing to a Variety of causes, & it is impossible that any one Medicine should be adapted for y. cure of each species of this disease. — The Cause is often lodged in y. head & brain, then it is in the first place exceedingly obscure, & in y. 2d place almost out of y. reach of Medicine, did we even know y. exact Cause

fit. — When seated in the head it is in y. first place owing to a wrong
formation of y. brain itself, in its very first formation: here surely
little can be expected from Medicine: 2dly from Tumors in y. brain;
I once upon dissection saw an Instance of this kind: here
no Medicine can afford relief: 3. From extravasations of blood com-
pressing y. brain: this may be occasioned by contusions, fractures from
without: it also happens in Apoplexy, & few people die in an Apoplexy
without having previously very general convulsions; excited by Nature
to throw off y. oppression in y. brain. 4 Extravasations of serum
in y. Ventricles of y. brain: 5. Ossifications in y. coats of y. Arteries,
veins or other parts. — In ~~all~~ these cases we ~~must~~ cannot ~~know~~
certain of cause; untill it is discovered to us by dissection; but if we were
the disease is still beyond y. reach of Medicine. — The cause
of a Epilepsy may however ~~be~~ & frequently is seated without the
head. — I do not here speak of local or partial stimuli y. some
times throw y. person into convulsions; e.g. acrid applications to
wounds in irritable habits &c. — ; but I mean some permanent
cause either in y. stomach, bowels or other parts of y. system, from
which y an epilepsy becomes idiopathic & is considered as y.
primary disease. — Under this head we mean the a too great
sensibility of y. system in general, or this sensibility is confined
to particular parts; particularly y. stomach & bowels. — Many
persons have this kind of constitution without ever being subject
to epileptic fits; & perhaps it always requires some occasional
or exciting cause to bring them on & we therefore see persons will
arrive at a considerable age before the experience these attacks,
this however is but seldom y. case; & in general epileptics show

themselves before ye. age of puberty, & are most commonly brought on by violent agitations of the mind: for if we examine into ye. causes of this disease, we shall 3 times out of four find ye. it was first brought on by violent & sudden terror; unless where the disease is ~~handed~~ entailed by parents on their Children, or originates, if I may be allowed ye expression, in the womb of ye. Mother. — I know several Children, whose ye Mothers, tho not subject to Epilepsies, are very hysterical & troubled w. disorders Flatulencies in ye. bowels; the Children on ye. slightest causes are immediately thrown into convulsions: If in constitutions of this kind a very violent cause operates, or even a slighter cause is long continued, they are apt to be thrown into epileptic fits & remain subject to them for ever after. — A strong confirmation of this opinion is, that this disease will sometimes wear quite disappear about ye. age of puberty or at least when ye. body is arrived at its full growth & ye. Solids acquire a greater degree of firmness; and if the patient is not relieved then he will probably remain subject to them ye. rest of his Life. — It is in the kinds of Epilepsy that we may expect relief from medicine, & perhaps in these only. — Various remedies have at different periods in Medicine been recommended as specifics for this purpose, & ~~almost~~ always laid aside, because they oftener failed than succeeded; this however is a bad reason for neglecting a medicine; for where diseases are constitutional, or have become so habit, we can seldom flatter ourselves with great hopes of success

I consider y. flowers of Zinc as possessed of a ~~very~~ gentle astringent quality, & I believe its principal effects to be owing to their ~~an~~ astringency. — Astringents have in all times been recommended in this disease, & it is only y. weaker & very gentle Astringents y. can be attended with Success. — When we are to alter y. natural constitution of y. System, we must attempt it by very gradual & slow Means; violent remedies or such as have a sudden operation, are improper for this purpose. — The Pieces quarries is a very weak astringent; but if its use is long continued, it has often relieved these complaints. — However whether I am right or wrong in accounting for y. operations of y. Zinc, is of no great consequence; it does not invalidate y. use of y. Medicine, which from y. cases I have related to you, & to some of which you were Eye Witnesses, may surely be considered as a valuable acquisition to the Materia Medica. The flowers of Zinc may be obtained either by Sublimation, or precipitation. They are obtained in Sublimation, either by y. addition of other bodies to the Zinc, or by y. force of fire alone without any addition. — The process is described in almost every dispensatory & book of Pharmacy. The simplest & equally good way is: to dissolve any quantity of white Vitriol (y. Salts of Zinc) in pure Water; filter y. Solution, to this we add a filtrated solution of Potash or Salt of Tartar, which any precipitation takes place. Pour y. Water off from y. powder at y. bottom, & by frequent ablutions of warm Water, free it from all saline ~~[illegible]~~ matter,

en we dry it for use: it is a white insipid powder: the real
ty principle, which united w. phlogiston, constitutes Zinc.
n my practice I made use of no other but what was prepar
this manner under my direction, by Mr. Bass of this place
should always begin with small doses: for children under
years of age, half a grain twice a day with white sugar
fonnewe of flour is sufficient to begin with; but we soon
ease it gradually to 4 or 6 ~~and~~ grains a day or more as y.
mptoms urge. — We seldom perceive any sensible effects
om it: sometimes indeed y. persons are sick & nauseate
ter y. first or second dose; I am not by any means certain
y. Zinc is y. cause of it; for some stomachs will nau
ate every thing y. hath y. name or appearance of Medicine

I am in ye next place to speak of Mineral Waters, ye method of investigating them & ye use in medicine. But previous to this it is absolutely necessary to say something on common Water, as mineral Waters are in reality only common Water combined wt some foreign matter. — I define Water to be: An insipid, not inflamable, transparent & fluid body. Of this there seems to be but one species in Nature, except when other matters adhere, wch are readily separable. Ye ancients have even supposed it to be a very simple & elementary production. It is a Substance ye enters into all other bodies, if we except perhaps Metallic substances & mercury. Its fluidity is very probably owing to ye large quantity of air ye is combined wt it, for we find ye Water cannot freeze unless this air is in a great measure discharged. Water may be readily converted into earth & hence ye new Theory wch at present divides all ye Philosophers of Europe, that this Earth is formed of Water & increases daily by ye Waters subsiding gradually. Water may be reduced under 2 Heads: Simple or common Water & Mineral Waters. The first is never pure but is always mixed wt some matters, wch however are not obvious to our senses. Mineral Waters are impregnated by such substances & in such a manner as to be easily discovered by our senses. — Common as well as Mineral Waters differ considerably from each other. We shall therefore in ye next place consider by what Methods we are to judge of common Water

hardly imitate by giving these substances in any other form. By giving them in a mineral water we give them in small doses, but continue them a considerable time y. great quantity of Water y. accompanies them, does not let them remain long in y. System, but stimulates y. diff.t Secretions by w.h they are soon expelled, & that y. bad consequences y. generally accompany astringents are avoided. In a word they may be employed in every case where copper or Iron are ind.d & w.h greater safety than we could possibly employ these metals in another form. It should therefore be y. ambition of every physician strictly & exactly to scrutinize by y. various springs on this extensive Continent, as he may flatter himself w.h performing cures by mineral waters w.h are otherwise out of y. power of Medicine.

Obstructions in the glandular system, such as the Scrophula are in my opinion more effectually relieved by mineral waters or even very simple pure water than by any other methods we can employ. A great variety of Medicines indeed at different times been employed for the cure of this disease, but in general to little very purpose, ~~what~~ if we except the various medicated springs. But it is not necessary the water should be impregnated with any mineral or foreign

This is analogous & indeed ye same w^h. ye w^h. we employ in judging of Mineral Waters. The most simple method is to add a solution of fixed alkali or a solution of Silver, w^h. is precipitated by ye nitric & muriatic acids, w^h. are those y^t. are universally present in ye earth, & consequently oftenest combined w^t. Water. ~~A solution of Sugar of Lead~~ is ye most subtile matter w^h. w^h. Waters can be tried, & there are very few indeed but what will grow turbid on an addition of this; we can therefore only judge from ye plus & minus or from ye degree. The specific Gravity has been reckoned another test to judge of ye purity of Water, but improperly so, as many saline substances have ye power of fixing a large quantity of Air, by w^h. ye specific Gravity of ye Water is diminished, tho it may be strongly impregnated by foreign matters. The more Air however Water contains ye stronger Menstruum will it be, or in other Words, it will act more powerfully in ye solution of bodies, in proportion to ye air it contains. Water is derived to us from ye Atmosphere in Rain. First then I shall speak of Rain Water. This is ye purest of all Waters & can only be imitated by frequ^t. distillations of common ∇ as appears by ye experts of Dr. Marcgraef of Berlin. Rain ∇ however is not perfectly pure, but is impregnated w^t. Matters capable of undergoing ye putrefactive process. Snow & Hail are equally pure, but contain a less proportion of air ye Rain ∇, & consequently ye power ~~of solve~~ of dissolving bodies is less. Dew is another atmospheric Water, w^h. must be more impure than ye former as ye Dews do not rise high from ye Surface of ye earth, before they fall down again, & this is also ye reason y^t. they are more putrescent than any of ye former. Rain, Hail & Snow fall in greatest quantity on high

substance, & perhaps a very pure light water will have advan-
that no mineral water possesses. — Of this kind is the bristol hot
well & in England, & from every information I have been ye
able to obtain the warm Springs near Potomack River in
Virginia are entirely of the same nature. A Gentleman applied
to me several years ago for who was afflicted with considerable
glandular swellings in the Neck for which he had taken every
medicine that is usually recommended in the Pleuphuch. He
had used mercury in very considerable quantity & continued
for a considerable time; he had likewise taken the Mezereon
or Spurge Laurel in considerable quantity, but ~~the~~ no other
effect but that of totally destroying the tone of the stomach &
subjecting ~~he~~ him to the most grievous spasmodic affection
in his stomach & bowels, which were only to be relieved by ye
constant use of ~~water~~ Laudanum. I early recommended it to him to have recourse
to the Virginia Springs, as the most probable method he could
pursue for his relief. But he delayed putting this design in
execution untill early last Summer, when he was so much
reduced that it was extremely doubtful if he should live to
arrive at the Springs. He did however get to them & immediately
began to drink ye water; but his constitution was so broken
down that he could not support the evacuations which ye
waters occasioned both by stool & urine. They however produced
a very great effect on ye glandular swellings in the Neck
for these were entirely removed by ye use of the water

ountains, hence ye origin of Brooks, Lakes & Rivers, ye Waters of wch come
ceived in purity to ye atmospheric Waters; but by running over a
large extent of ye Country they may be impregnated wth ye various
matters they meet wth in their course. The Waters of Lakes do not
stagnate entirely, for they generally have some outlet by wch they run
off; small bodies of Water however collected in Lakes may undergo
a change & become putrescent River Waters are very tenacious of their
purity & are scarcely affected by any Impurities ye may be communicated
to them. Spring Waters owe their origin to Brooks, Lakes & Rivers,
for these penetrate ye earth & afterwards break out again in distant
places, giving us Springs, wch are of diff. degrees of purity. Those
near ye higher countries seem to be purer than those in ye lower
grounds. Few of them however are entirely pure. In ye next place
I proceed to speak of Mineral Waters. These have afforded matter for
inquiry to Chemists & Physicians in all Ages; we should therefore wth
reason expect to find a good account of them & of ye qualities & vir-
tues. But here we are deceived, for were we to attend to ye diff. cha-
racters & analysis ye have been given of ye various mineral springs,
we should be led to imagine ye there was a great variety of them,
but ~~ye contrary will~~ we shall find ye contrary to be ye case on examination.
It is therefore needless to consult those authors on ye subject who
wrote whilst Chemistry was yet in its Infancy; for tho no less than
200 books have been wrote on ye subject, we have no complete system,
& often nothing but mistakes & errors, ye consequence of ye grossest
ignorance — In this manner have many waters been misrepresented

He died on his return from the Springs & on opening his body it appeared that the villous coat of the stomach had been entirely destroyed & no appearance of it remained. This had no doubt been occasioned by y. large quantities of mercury & Nitrocum which he had formerly taken; & this likewise explained the cause of the violent spasms which had afflicted him for a length of time. Abscesses had likewise taken place in the Lungs & other viscera; tho it is probable these were only formed during the last stage of his Illness. — From y. effect which y. water produced on his Swellings there appears to be little doubt but that if he had recourse to them at an early period of his disease & before his constitution was destroyed by the acid medicines which he had taken, he would have received the desired Relief. — I have recommended the waters to several other Persons for various complaints who have gone from this city & been greatly relieved by them. The one was an Arthritic vague or wandering gout, which was greatly relieved. Another was a violent Colic which had continued for many years & no medicine had ~~many~~ made any impression on it; but it yielded to the use of these Waters. From the accounts they gave me it appears that the water is extremely

through ignorance, & many also from ye partial accounts of a designing & lucrative neighbour. I must therefore proceed here in a contrary manner from what I have done on other occasions, & what I would always chuse to do. And instead of drawing theories from facts I shall first lay down some general propositions & see if ye conclusions yt are drawn from them reasoning is compatible wt ye facts given us by Authors of credit. For facts yt are little to be depended upon, as most of those are yt relate to mineral waters, can never be ye foundations of our rational conclusions. We must therefore in ye first place consider: What matters may be combined wt Water & of what quality these matters are? These may be reduced under 4 heads: Saline, Inflamable, Metallic & Earthy

1. Of Saline Impregnations or Saline Mineral Waters.

We know yt all saline bodies are soluble in Water, but notwithstanding ye general solubility, every person must allow yt it is only those saline substances yt naturally & spontaneously occur in ye earth, yt can impregnate & combine wt Waters. In ye first place then there are no Acids in ye earth to impregnate ∇ except ye Vitriolic & muriatic acid. The muriatic acid, or ye acid of sea salt, is never found but combined wt Alkali, & is then in ye our common state of salt, & very rarely it is met wt in a fixed amoniac, as combined wt a Vol. Alkali. The Vitriolic acid has been generally supposed to be present in its natural state, as it occurs so freqly in ye earth. But if it is ever present in its natural state, it can only

& its remarkably easy on the stomach. I have been assured that it is common to drink from 6 to 10 quarts of y. water in a day; which by its bulk probably operates by Stool & Urine & Sweat, & to use the emphatic expression of one then, it runs through every part of the body as through a Sieve. There cannot then be a doubt but what it must be highly useful in some diseases where medicines can ~~have~~ seldom be employed with much advantage. Thus in glandular & visceral obstructions; in debility of the stomach & bowels, in nephritic complaints, in particular species of Palsies & Rheumatisms it must be productive of the most favourable effects. An analysis of the water that could be depended upon & made on the spot, is a most desireable object, as well as a particular & scientifick investigation of a number of other springs that have acquired reputation in different parts on the continent; for it is only from an accurate knowledge of the nature of y. impregnation of the water that we can judge of its uses & how far it may deserving of its reputation

be so for a moment, as it so readily combines & unites w.th other matters, & its attractions to these are so strong y.t they prevent it from remaining long unassociated. — The supposition of its being in a separate fossile state, proceeded from y.e notion of its giving rise to y.e inflamable damps in mines & ∇ 2d G from y.e acidulous tartrate of some waters. The first I think is owing to a mephitic air & y.e 2d to a decomposition. For y.e sulphureous pyrites y.t contain an Iron are very subject to deliquescence on exposure to y.e air. It is to y.e deliquescence y.t y.e Water flowing out from Coalmines generally owes its impregnation, but then this hardly deserves y.e name of a mineral spring. There is still another fact w.ch supports y.e possibility of acid mineral waters. The Vitriolic acid, as it is combined w.th Iron, is generally in a volatile & when diffused in ∇, soon separates from y.e Iron & lets it fall in y.e form of an Ochre. This happens sometimes in Chalybeate Waters, & y.e Acid has been so obvious as to change y.e colour of y.e Syrup of Violets. But as y.e is only owing to a decomposition we can scarcely allow of a natural vitriolic acid mineral Water.

In y.e next place we are to consider whether <u>Alkalis</u> are ever combined w.th ∇. & form Springs.

The Vg: Alkali does not occur in y.e mineral kingdom & it we may therefore determine w.th certainty that it is not found in any mineral Waters. — It has not yet been properly ascertained whether a Vol: alkali ever enters mineral Waters in

its separate state. Some accurate Chemists indeed have obtained a vol. alkali from mineral Waters; but then it seems rather y. result of a decomposition of y. Hepar Sulphuris prest. in y. V. — Ammoniacal Salts have never yet been discovered in mineral waters; this is perhaps owing to y. decomposition w. they undergo so readily — But y. fossile Alkali seems to be universally present in mineral waters both as joined w. other matters & per se. We next proceed to y. ~~fossile~~ neutral impregnations y. may occur in mineral Waters. Here we can only admit y. y. fossile neutral Salts can ~~occur in~~ enter these Waters, & ~~we~~ therefore we must reject y. neutrals formed w. a nitrous & vegt. acid. Margraaf indeed in his Analysis of Snow water found a portion of Nitre, but then it was in y. proportion of one grain to 100 quarts. And as this an Impregnation of y. kind can have no influence in practice it would be needless to consider it. If therefore we pay attention to what I said above of y. Acids & alkalis y. are or may be present, we can easily see y. Glaubers Salt & y. common Salt are y. only Neutrals y. ~~can~~ are ever met w. in these Waters. We can seldom obtain them pure, but in general they are mixed together. Glaubers Salt is not so universally present as has been imagined, but what has often been taken for a Glaubers Salt is a combination of Vitriolic acid & Magnesia or some other calcareous earth, & is called y. spurious Glaubers Salt: & it is this y. furnishes us w. the

burying
saline waters, for instance ye famous one at Epsom in England.
If we look into Writers on mineral waters we will find them
often say y^t they found Nitre in y^r analysis of mineral Waters.
Dr. Short & Dr. Rutty both make use of this term, but you are
to observe y^t what they took for Nitre was nothing but this
spurious Glaubers Salt or Magnesia, & is ye same w^h. ye Sal mu-
rale or calcareum w^h. is thrown out from ye walls of Houses —

2. Of Impregnations with inflammable Matters.

Naptha & Sulphur are ye only solid inflammables; both of w^h. refuse
combining w^h. Water; they may however be carried along w^h. it & so
minutely diffused as to have ye appearance of a combination.
Lucas indeed takes no notice at all of this diffusion, from a
preconceived opinion of their impossibility to unite; but we may
sometimes distinguish them very plainly both from y^r odour & taste.
The Naptha diffuses itself here in ye same manner as essential
oils in distilled waters. Sulphur is sometimes suspended in
considerable quantity by ye water, & ye Pipes y^t convey ye Waters
of Aix la chapelle or Spaw ~~are we~~ have even a Crust formed on
them by ye sulphur w^h. ye Water deposits. The Naptha may be
combined w^h. V by ye mediation of an Alkali, w^h. w^h. it will then form a
Soap. This is easily done by art, ~~but~~ some have however imagined y^t ~~Nature gives~~
this never existed in Nature; but we should not set bounds to her ope-
rations, & besides we have an acct. of Waters by accurate & good Che-
mists, where this combination actually took place, tho it must be con-

lessed y^e. there are but very few Instances of it. Sulphur, as I observed before, combined wth. an Alkali ~~becomes~~ forms an Hepar sulphuris w^h. is soluble in ∇. The sulphureous Waters therefore, w^h. are commonly called stinking Waters, & of w^h. we have an instance in y^e. mineral spring at Harrowgate in England, are owing to y^e. Hepar ⊕ris. The Sulphur is generally present only in very small quantities, & on y^e. acc^t. y^e. Virtues of Waters of y^e. kind are perhaps not so considerable as has generally been imagined; nay the Virtues they are induced wth. are more probably owing to y^e. Alkali they contain.

3 Of y^e. combination of Water wth. metallic Substances.

The greatest number of metallic matters are insoluble in y^e. Acids y^t. occur naturally in y^e. earth; some are not soluble unless they are separated from y^e. ore, others require heat in order to render them soluble, & therefore ~~y^t~~ there are but few metallic substances y^t. impregnate Water. Iron is y^e. most common Impregnation both from its presence in almost every place in y^e. earth, & from its superior strength of attraction. Copper is freely & easily corroded by Acids & saline substances, & accordingly we sometimes find Waters y^t. are impregnated wth. it; but it is still only seldom y^t. they do occur; for Copper is liable to be precipitated by Iron. Iron is present in almost every mineral spring, rarely however in its natural metallic state; but generally combined wth. neutral Salts. When united wth. y^e. Vitriolic acid, it should be found in y^e. state of green Vitriol; but we can hardly ever obtain

it in this state, because ye. Nitric acid is generally present in its volatile state; in this readily decomposed & by ye. decomposition loses ye. power of holding Iron in solution! As ye. acid is rendered volatile by air, these Waters are not easily kept or transferred. This volatile Spirit wh. they contain is very absurdly called ye. Spiritus Mundi. Mineral Waters impregnated wh. Copper are found only in a few places, and by laying rods or Masses of Iron into ye. Spring ye. Copper is precipitated & ye. Iron suspended. The Waters decomposed in this manner are known by ye. Name of Cement Waters. Blue Vitriol has been found native in Scotland & a few other Countries; but it is only rarely to be met wh., & ye. for ye. same reason that green Vitriol or Copperas was scarcely to be found native. It is somewhat remarkable ye. we find no Waters impregnated wh. Zinc, tho it may be suspended by ye. Nitric acid & is not precipitated by Iron or Copper; & white Vitriol, wh. is a combination of Zinc wh. ye. Nitric acid, is found to be a native substance, & Zinc is also found freely in ye. Earth. It is very probable that Zinc sometimes impregnates Waters, but there is a difficulty in discovering this, whereas Iron & Copper are readily discoverable. The only true method to know wh. a certainty whether Water does contain Zinc, is to take ye. residuum of ye. V & cement it wh. Copper; if it contains Zinc it will change ye. Copper into Brass. Gmelin found a ~~black~~ Spring of Water in Siberia, wh. was impregnated wh. Zinc

4. Water impregnated wth. Earthy matters.

Earths are very copiously suspended in Water, & independant of any solution in ~~water~~ Acids. The calcareous earths in particular ~~are~~ freely impregnate Waters: they are entirely insipid, & we can only judge of y^e. being present by y^e. Sediment y^e. Water deposits: all y^e. incrustating Waters, or such as cover ~~the substances~~ ~~over~~ wch. they meet wth. in their course wth. a calcareous crust, are of y^e. kind. It is difficult to explain how these earthy matters are suspended in ∇, unless we suppose them first dissolved as a quick lime & y^e. on acquiring y^e. mephitic air they are again deposited. The diff^t. taste in each may be owing to y^e. diff^t. manner in wch. y^e. Earths are previously deprived of y^e. ∇ & air. In artificial quicklime this is done by calcination: in these natural earths this is done by means y^e. are not discerned by us. What seems to favour this theory is, that these Waters have been freely used wth. advantage in y^e. Nephritics. — Water is also impregnated wth. Magnesia & sometimes wth. y^e. earth of Alum — Crystalline Earths are also present in Waters, & are often deposited by them; they are however never present in such quantities as to give them a peculiar quality. Argillaceous earths also impregnate Waters, & it is this kind of Water y^e. ~~has~~ is very improperly by Authors called saponaceous. ~~The~~ Earths also occur in Waters as combined wth. y^e. Vitriolic acid, & forming earthy Salts, wch. afford us several species of mineral Waters.

~~Liberal~~
Schneit
is so
albei
the
~~has~~
of
Dis
expir
of
natu
& w
Pha
ge
Po
Se
ve
Co
Ca
ge
ex
ha
to
the
p

Vitriolic Calcareous earths ~~are~~ combined w.th y.e Vitriolic acid give us a Selenites; & affords what are generally called hard Waters. This Selenites is sometimes present in large quantities in Waters. Magnesia alba, or Sal Glauberi superium is freqtly present in Waters, & that, as I before observed, have been called nitrous waters by y.e generality of Authors, from y.e figure of y.e crystals. The Earth of Alum does sometimes, but very rarely impregnate Water; for it is precipitated by Iron; besides Alum is a ~~rare~~ scarce production of Nature. Fixed Ammoniac rarely, if ever, impregnates Water, & y.e Experts y.t prove it does, ~~th~~ are but few & were not made w.th sufficient accuracy

I have now enumerated all y.e diff.t species of mineral Waters y.t arise from y.e diff.t matters w.ch they are impregnated. But they are again divided according to y.e difference of Temperature into y.e Acidulæ, Proper mineral Waters, & Thermæ, Hot Springs. — Endless have been y.e Disputes y.t have arisen about y.e cause of their hot springs; & we still know as little about it as ever our Ancestors did. I shall therefore pass over it as ~~it~~ any thing y.t I could say would be entirely conjectural & of no service towards ascertaining their Virtues or uses in Medicine. If they have any diff.t from what they might be supposed to ~~have~~ derive from y.e matters

wd. wh they are impregnated; it can only be ascribed to y. warmth or heat wh they possess & wd. wh they are employed —

I shall in y. next place consider how we are to investigate mineral waters in order to know y. contents & ~~by~~ thence judge of their use in medicine. It is one of y. most difficult operations in Chemistry to examine mineral waters accurately; & it requires not only y. greatest attention in y. person y. makes y. trials; but y. these trials should be repeated frequently & at diff. times on y. same water. When we are to examine a Water we must pay a strict attention to y. following rules. We should always examine y. Water at y. Spring if possible, for Waters are liable to undergo changes if they are exposed to y. air only for a very short time. 2. We should carefully examine y. situation of y. Spring, y. nature of y. Soil, & particularly y. hills & mountains y. are near it. 3. Examine its sensible qualities i.e. y. taste, smell, colour &c. of y. W. 4. We should by y. Thermometer & Ballance determine y. natural heat & Weight of y. Water. 5. We should examine whether they contain any volatile parts; this we know by y. following signs: Their ~~have a less~~ specific gravity is less than in other waters: they sparkle & form bubbles, ~~frequently~~ sometimes at y. head of y. Spring as they issue out, but always if they are shaken in a Glass, or poured from

one
the
mes
to
rel
appe
We
If y
we
y. a
y. a
& by
for
appro
It w
be a
ayre
how
y for
Ifte
of y
deti
Sir
the

one Vessel into another. If these Waters are put into Bottles & there corked very tight they break y. Bottles. But y. most exact method is to tye y. neck of a moistened & sound Bladder to a Bottle ~~in wch there is some of y. m~~ almost filled wth. y. mineral Water. Then shake y. bottle pretty by in order to make y. spirituous parts exhale, wch. will be rec. into y. bladder. We are then to a tye a string very tight round y. neck of y. bladder & afterwards separate it from y. Bottle. By y. means we have y. volatile part separate & may then determine y. its nature & quantity. 6. We should observe what changes y. Water suffers on being kept in close & in open Vessels, & by successive degrees of heat untill we arrive at y. boyling point; & if by y. means Chrystalls are formed or a sedimt. deposited, we must carefully collect them for examination. It is almost impossible, but y. we shall by observing these rules, be able to judge in some measure of y. Nature of our mineral Water; & ~~then they~~ in y. case we shall be directed ~~in~~ how to y. prosecute our enquiries & suggest new experiments.

After this we are to proceed in y. 7th. place to a decomposition of y. Water. For y. purpose we employ 3 means: Evaporation, Destillation, & precipitation by y. addition of ~~some~~ certain substances. It is indifferent wch. we employ first, but it is absolutely necessary that all y. 3 should succeed one another. During y. destillation

& Evaporation we should freely interrupt the operation & examine y. diff.t matters y.t come over in distillation, & give an opportunity for chrystallization to y. evaporating water — I shall next take notice by what means, besides those already mentioned, we may discover y. Impregnation of y. Water. 1. We judge ~~of~~ y.t an Acid or Alkali impregnates y. Water not only from y. Taste, but ~~y. colour~~ by observing what changes it produces on y. Syrup of Violets; & then by ~~saturating it w.th~~ pouring on a sufficient quantity of acid or alkali to saturate y. V & render it neutral. 2. If y. Water is impregnated w.th Sulphur, y. is readily discovered by y. Smell, & by y. black colour w.ch it gives to Silver. 3. We discover y. Vitriolic acid when joined w.th an earthy substance by two methods: by adding a fixed alkali, for y. decompounds these kinds of neutral Salts, & y. calcareous or earthy parts subside to y. bottom; or by adding a solution of ♀ in y. Nitrous acid; w.ch also decompounds y. impregnations, & forms a turbith mineral w.th y. acid ~~or~~. 3. We discover a chalybeate V by y. addition of Galls, w.ch w.ch it strikes a black colour. 4. We know y.t y. Water is impregnated w.th Copper if on y. addition of y. volatile Sp.t of Ammoniac, y. Water turns bluish, & it does this in proportion to y. quantity of copper it contains; & if we add Iron y. copper ~~is precipitated in~~ falls to y. bottom in its natural state & colour

shall only add two more expts, wch. may be applied to almost any Mineral Water. — The first is to make an artificial Sulphur or Brimstone, by wch. we can know whether ye. Vitriolic acid is present in ye. Water or not. For this purpose we take some of ye. Sediment of ye. mineral Water & mix it wth. any inflammable matter, Charcoal for instance, place it to a fire untill it becomes red hot, & if there is but a grain of Vitriolic acid contained in this substance, we may discover it by ye. sulphureous smell wch. will issue from it. By ye. other Expt we can know whether a Mineral Water contains any portion of a metallic Matter, suspended by some acid. For this purpose we take some of ye. Lipidium for ye. making of Prussian blue (as described by Mr. Macquer) and add it to a mineral Water; if ye. Water contains any metallic substance suspended by an acid, the Water will become turbid & get a sediment; whereas if ye. acid is combined wth. an alkaline Salt or a calcareous earth this addition will have no effect on it; If therefore on ye. addition we find ye. mineral water undergoes no change we ~~conclude~~ may firmly conclude yt. ye. Acid is joined ~~to a~~ either to an alkali or to a calcareous earth; but if a precipitation ensues we may wth. ye. same certainty conclude that ye. Acid is united wth. some metallic substance —

After we ~~have~~ are persuaded that we know ye. diff. matters ~~parts~~ ye. enter into a mineral water, we should endeavour to imitate ye. Water by art: for ye. purpose we should Water ye. has undergone freq. distillations & of whose purity we are well assured, & add ye. diff. matters wch. we

discovered in ye mineral Water to it. If ye Water by standing some days acquires ye taste, odour & other qualities of ye mineral water, we may be satisfied yt. ~~we are know~~ our experts were accurate & just; if not, we have reason to doubt of ye accuracy, & yt. ~~we are~~ there is still somewhat entered into ye composition of ye mineral water, yt has eluded our researches.

I am in ye next place to speak of ye Virtues of mineral Waters & their use in Medicine. If I were here ~~to deliver~~ only to enumerate ye diffr. Diseases wch. have been cured by ye use of these Waters, it would require at least days if not weeks. There is scarce a Disease ~~xxxx~~ on ye records of Physick but ~~has~~ what has is said to have been cured by drinking ye diffr. mineral Waters. But ye facts ye are alledged in proof of their efficacy are not to be depended upon, as they have really been represented from ye Ignorance, Design & credulity of their abettors. — In order to your understanding ye effects of mineral waters, it ~~will~~ is absolutely necessary that I should say something of ye effects of common Water on ye human body, tho ye consideration of this does not come under ye head of Astringents; & I shall have an opportunity to consider it more fully hereafter. —

Cold water taken into ye Stomach acts as a powerful stimulus to ye whole system. It was for ye reason ye ye Antients, & even at this day ye Italian & Spanish Physicians, order it in ye worst kind of fevers, in order to bring them to a crisis. On ye foundation also

it is and in some chronic distempers, for it determines y. fluids
y. surface of y. body, & is in many cases an excellent remedy.
By its stimulate it ~~forces~~ excites appetite & promotes digestion
& by its bulk it promotes y. peristaltic motion of y.
Intestines. Carried into y. blood it distends y. vessels &
will thus stimulate y. vascular system, by wh. means
will keep up & promote y. usual excretions. As y. fluids
are constantly undergoing some change, water is y. best
menstruum to carry off y. degenerated parts & keeping
y. other pure & fresh. These are y. chief effects of
pure water on y. system, & y. mineral waters will have all
these besides what other virtues they may acquire from
y. particular substance wh. wh. they are impregnated
If they are impregnated wh. acids or alkalis, they will be
more stimulant, antiseptic, & antizymics, & encrease all
y. diff.t secretions. Water impregnated wh. oil & A.
will determine more powerfully to y. surface & have
y. effect of destroying cutaneous vermin. Those y. con-
tain an ethereal or volatile spirit, as they are of less specific
gravity, will sit lighter on y. stomach than common &
facilitate digestion. All those contain metallic sub-
stances, Copper & Iron for instance, will partake of y. virtues
of these, & ~~hence~~ have besides several advantages y. we can

Vegetable Astringents differ from the fossile in several respects: they are
in y. first place not so quick in their operation. 2d. Their action is more con-
fined to the primæ viæ, whereas y. stimulus of y. metallic astringents
soon extended over y. whole system. 3d. they are also weaker, and therefore where
a strong and quick astringent is necessary, y. Vegetable astringents are
much inferior to y. fossile eg. In Hæmorrhages Veg. astr. would be of
little or no service; but where a change is to be made gradually in the
system and y. use of Astringents is to be persisted in for a considerable
time, we very properly give y. preference to y. Veg. kingdom. They should
be given in substance when any considerable effects are expected from them; for
we have no proper Menstruums y. will extract their Virtues powerfully; for
tho we have Water & spirit of Wine yet they give us very weak Impregnations, but
if they are long boiled in Water they lose great part of their astringent
quality. Impregnations in Sp. of Wine have this further Inconvenience that
y. strength & quality of the Menstruum limit us in the dose; for allowing
that an ounce of spirit would extract & contain ℥ss of an astringent,
which is allowing largely tho y. dose would still be small, there are very
few patients & but rare occasions, when we could venture to give an ounce
of a spirituous tincture for a dose, without producing effects y. worst
of worse in their consequences, than any good the medicine could do. The
late Dr Alston, Professor of Materia Medica in y. College of Edinburgh
tried y. Peruvian bark remained for a considerable time in y. Stomach
~~without being~~ before it was totally dissolved, and it is very
probable that the same observation will hold good in other Vegetable
astringents. Dr Cullen gave even says that he has seen y. peruvian

ish thrown up unchanged after it had remained 8 days in y. Stomach.
In this case however it must have been owing to y. diseased state of y. Organ;
and we sometimes find y. even food will be vomited up unchanged after
it hath remained for a day or more in y. Stomach, tho it is by no means
otherwise difficult of Solution. It is however certain y. Vegetable astringents
taken in substance will remain a much longer time in y. Stomach
than when taken in Solution, and their principal action appears to be
on y. Organ, there can be no doubt but the longer they remain there
the greater time will their action be continued & y. more considerable effects
will be produced by them. We also observe that when they are given in
Solution & even very large quantities taken by y. patient, they will seld-
dom be attended with so considerable & certain effects as when they
are given in substance. This is in a great measure owing to y. passing
off quickly, and even frequently proving purgative; and tho they are not entirely
fluid form subject to undergo a fermentation in y. stomach, by wh.
they are altogether changed from y. original nature and will undoubtedly
disappoint us in our expectation. Insoluble astringents as they are quickly
dissolved in y. Stomach and at y. same time not subject to the ferme-
tation process, but on y. contrary check fermentation, are not attended
with either of these ~~ad~~ disadvantages, but should always be used where we
require a strong, sudden & certain adstriction; but then on account
of their stimulus as well as powerful adstringent quality they should
not be continued too long, except in cases of great necessity; whereas
y. Vegetable should be employed when we endeavour to bring about gra-
dual changes instead of sudden adstrictions. They ought then to be given
in powder, pills or boluses, and as by a continued use of them, a costiveness
is frequently occasioned, we should combine them with such purgatives

as will in some measure coincide with our principal intention, and ~~for this purpose~~ none can be better adapted for this purpose than Rhubarb. Or if for particular reasons we would not wish to combine the purgative & y. Astringent, but obviate y. Costiveness by giving Laxative med. at particular times, we should never make choice of those y. have a tendency to relaxation e.g. Neutral Salts, Manna &c but employ such as will act very moderately and in a great measure by excreting, instead of diminishing, y. peristaltic motion e.g. Flowers of Sulphur, Aloes, or even Calomel, when a few grains will answer y. Intention. For it should be our purpose only to obviate Costiveness & not to produce frequent & copious discharges, as we should then counteract y. operation of our Astringents, & be disappointed in our principal Indication —

I am now to enter on y. consideration of y. particular Substances y. are employed as Astringents. From what hath now & in former Lectures been said of y. Virtues, Qualities & use of Astringents you cannot scarcely be at a loss to know their general operation & effects; it will therefore be needless to ~~recapit~~ enumerate & recapitulate them under every individual Substance. I shall therefore only take notice of those Astringents y. have been recommended for particular purposes and are best calculated to answer particular Indications. Dr. Cullen hath treated this Class of Medi. very amply in his Materia Medica, and you will therefore have no loss if I should be guilty of some Omissions. —

<u>Pentaphyllum</u> Cinquefoil. This is a simple and agreeable Astringent and may therefore be used as a Tea or Infusion when Astringents are indicated. We are not indeed to expect any great effects from it, but as it is not very disagreeable to the palate it might in Cases of a general

It may also be used in this manner to prevent the return of Hæmorrhages for these cases require that our astringents should be very weak & gentle.

relaxation accompany the use of other adstringents and be prescribed for
ye constant drink of our patient. Dioscorides recommends a decoction of
ye root for the toothach and to strengthen & cleanse relaxed & putrid
Gums. Tournefort gives us Examples where ye expressed Juice of the
recent herb taken every day from 2 – 6 Ounces in some broth
hath entirely cured ye fluor Albus. I had occasion to mention to you in
a former Lecture that a fluor albus was frequently ye brought on by a
general or partial relaxation, and ye only gentle & weak adstringents ought
to be employed for ye cure of it. If we do not wish to trust ye cure entirely
to ye Cinquefoil, it may at least be drank in a Tea by our patients w^th
will correspond in ye principal Intention. Rosa. Throubush. The flowers
are sometimes used in Medicine; they are a weak adstringent of an agreeable
Odour and Taste, and therefore might be frequently used with advantage in
putrid fever and Dysenteries. An Infusion of red Roses to wch a few drops of
the Spirit of Vitriol ~~Ha~~ is added & sweetened wth Sugar is an excellent drink in putrid fevers and
Dysentery, and of much more consequence than ye numerous drinks that are generally
ordered in those disorders. * Tormentilla. This is a very pure Adstringent and
must be ranked in ye first place of Vegt. adstringents; in Italy, where it grows
in abundance, it is employed for ye tanning of Leather. Before the Peruvian
bark was known & introduced into Medicine, this & other adstringents were
very generally employed for ye cure of Intermittents and in all those cases
where ye bark is now used wth superior success. The Indians also ~~use~~ on this
Continent use ye Geum for ye same purpose, which is a plant that corresponds
in Virtues and Qualities with the Tormentill. When this is prescribed in
Intermittents it is generally combined wth some Bitter; for Bitters, united w^th
adstringents ~~were~~ ~~only~~ were found useful in these cases, long before Physicians knew ye this

union was formed by nature in y. Peruvian bark. — The Tormentill hath however been always recommended for y. cure of a Dysentery & Diarrhoea. As it is a simple, grateful & strong adstringent it may answer as well in these disorders as any other medicine of the kind; but I am still very doubtful whether adstringents are so frequently useful in these cases as we should be led to imagine from y. testimony of Physicians. But I shall have a better opportunity to give you my sentiments upon this subject. A decoction of this root hath been much recommended to prevent Abortions. These are perhaps 9 times out of 10 owing to relaxation and Irritation. To prevent them it is necessary that y. Woman should be put on a course of gentle adstringents soon after conception; for if we make use of strong adstringents we encrease the action of y. Vessels & impetus of y. blood to such a degree as to render y. abortion still more certain to be dreaded. In cases of this kind a cold Infusion of y. Tormentilla or any other Vegetable adstringent will answer better than giving them in substance, provided our patient will take a sufficient quantity. In course of y. root may be macerated for 24 or more hours in a quart of cold Water, and this will extract its Virtues better, and at y. same time render y. medicine much more agreeable, than either Infusion in Boiling Water or boiling it for any time. Of this I was assured some years ago by experiments instituted by myself & some of my Contemporaries & friends in Edinburgh. Five or 6 formed ourselves into a private society solely for y. purpose of experiencing ourselves y. Virtues and qualities of different medicines and investigate y. best method of preparing them to answer the purposes of Medicine. Amongst others we tried adstringents and y. Menstruums y. would most effectually extract their Virtues. We found universally that infusing them in cold Water for 24 hours would answer better

then
be es
we con
~~and the~~
any
Bel
where
Rabia
little
which
or Ma
seen y
y. cell
tendon
hitherto
from
it for
cry yo
being
hypo
more
any one
who
universe
also be
in y.

than any other Method ye. could be employed for ye. purpose; and in order to be well ascertained of ye. fact we made ye. experiment on every adstringent Vegetable we could get or that is employed in Medicine: the result was always ye. same, and tho I do not remember that it is taken notice off in ye. Writings of any Physician, tho it is a fact established beyond a doubt, and as such I recommend it to you always to employ ye. Cold Infusions of adstringents where you have sufficient time to prepare ye. Medicine in this manner.

Rubia Tinctorum; Madder. This is a very weak Astringent, and as such deserves little notice; we must not however let it pass unnoticed for another quality which it possesses. It was first observed by Mr. Belcher ye. Animals feeding on Madder have ye. bones coloured red. Further experiments demonstrated ye. even ye. hardest bones were coloured by it sooner in young than old Animals; ye. callus of a fractured bone is however not coloured by it, nor ye. flesh, nerves tendons ligaments or any part that is not bone. Since that time it hath also been discovered that several other substances have the same effect. From this principle Mr. Levret, a celebrated Man Midwife at Paris, employed it for ye. cure of ye. Rickets in children, in which he found it attended wt. very good effects. But I can scarce believe that ye. cure was in any degree owing to ye. Madder: the Rickets are a disorder in wh. Nature frequently performs ye. greatest part of ye. cure, and where we generally trust more to ye. Cold bath than to any Medicines given internally. It seems very improbable ye. a ~~remedy~~ substance, wh. is found to make ye. animals who feed on it heavy & sluggish, ~~shou~~ could have any effect in taking off a universal Lassitude and in rendering ye. bones firmer. Madder hath also been recommended for ye. Jaundice, and was held as a specifick in ye. cure of it. It does not however appear to produce any Effects by

which it hath a chance of affording any relief in y. disorder. Many sufferers, but particularly those who have either a red or yellow colour, have on no other foundation but y. colour, been employed & recommended for y. cure of y. Jaundice; tho they are not of y. least consequence. We now know y. this disease, three times out of four, is owing to concretions fixed & impacted in y. biliary ducts by wh. they prevent the free course of y. bile into y. duodenum, thus occasioning a regurgitation & absorption of y. fluid into y. blood; this disorder may therefore be brought on suddenly & cured as quickly; sometimes however when y. concretions are large they will remain obstruct y. passage for a considerable time, and at length find a passage into y. intestines & come away by stool. A Medicine given by accident at y. time y. hath generally y. merit of performing y. cure, tho it could not have y. least effect or tendency to it. The cure must necessarily depend on y. solution or evacuation of these concretions. We have hitherto discovered no Remedies by wh. we can dissolve them; and y. evacuation must be attempted by emollients, laxatives, emetics, by wh. we diminish y. tension & spasm in y. ducts & at y. same time by y. compression of y. liver force them into y. intestines. —— Dr. Schulz late Professor of Medicine at Halle, tells us y. he has employed a decoction of Madder for y. Gutta rosacea or red simples in y. face, & to be taken internally & found it an effectual remedy.

Bistorta. Bistort. This is a simple and strong adstringent. It hath been recommended for y. toothach, and to confirm loose teeth & preserve them. Many adstringents have been recommended for y. same purpose, and with much more Justice & than y. Dentifrices & powders generally made

* The itch it is now well known is altogether owing to a particular species of small Insect, called by Linnaeus the Acarus, & is ye same which infests damaged flour & other matters. The disease therefore is entirely cuticular, & only to be cured by such applications as will come in immediate contact with the Insect & destroy it. The Lapathum or common dock root bruised & infused in milk or Cream for 24 hours is used as a domestic remedy to cure this disease: all ye eruptions are to be washed with the infusion & I have been well assured that it is an effectual remedy. — Whether Ring worms originate from ye same cause hath not yet been determined they appear at least local & confined to ye parts which they occupy, and I have seen instances of their being cured by ye expressed juice of our common dock root

use of this purpose. The preservation and soundness of y. teeth depends in a great measure on y. firmness & purity of y. Gums; if these from any cause grow lax, spongy & separate from y. teeth, these must necessarily decay. By moderately astringent applications we keep the Gums sound & at y. same time preserve the teeth. By y. powders & dentifrices y. Gums are frequently fretted, y. powder insinuates itself between y. Gums & teeth, and with this & y. frequent rubbing y. Gums may be separated from y. teeth & a decay of these be brought on. But an electuary or teeth Water composed of a gentle astringent, or by frequently chewing some simple astringent, we render the Gums hard & firm, encrease y. circulation in these small vessels, fix y. teeth firmly in y. sockets, & thus if any thing will have y. effect, prevent y. early decay of y. ~~teeth~~ or keep them white & shining & contribute to their beauty as well as preservation.

Lapathum Dock. These are different kinds of Dock, wd. however correspond much in virtue. They have at all at different times been recommended for y. cure of y. scurvy, and for eruptions & foulnesses on y. Skin, which have improperly been said to be owing to a scorbutic habit of body. The itch hath improperly been attributed to y. same cause, and y. Lapathum employed for y. cure of it in y. Ling. antipsoricum of y. ed. disp.* ~~but I believe it hath little or no effect in curing this disorder.~~ The radix Britannica, wd. is also a species of Dock hath been particularly recommended by Muntingius, in a treatise wrote expressly on y. virtues of y. plant, for y. cure of y. Scurvy; by wd. Recipe y. Army of y. Emperor was saved from impending ruin from y. disorder during y. treatment in Holland, where this is a frequent disorder. It hath also been always recommended for y. cure of ill conditioned ulcers, which hath been confirmed by Mr. Golden, Lieut. Governor of New York

* The Filix Mas, Male fern hath been recommended for the cure of Worms, & accordingly I have regularly mentioned ~~the~~ its anthelmintic effects in my different courses of Lectures, but at the same time from its not being continued to be used for that purpose, supposed it did not claim much attention. Dioscorides hath recommended it against ye. Tape worm, at 6 drachms for a dose; this was indeed generally known to Physicians; but of late Madam Nouffer acquired great reputation by a specifick against ye. tape worm, which she kept secret, until it engaged attention sufficient to procure her a premium from ye. King of France, when she disclosed her Secret, & which is no other than the Root of the Fern, administered in Powder; and thus a remedy is again introduced into Practice, under most favourable circumstances, that had lain dormant, as it were, for many centuries; & it is highly probable that Madam Nouffer or some person from whom she learned it, had acquired ye. knowledge of ye. remedy in some old neglected Herbal

who learned its use from ye. Indians. He relates ye. case of a person, who had a most obstinate Ulcer in his Throat, wh. ye. regular Physicians attempted in vain to cure, but ye. Indians cured it in a short time wh. a decoction of this plant given internally & at ye. same time used as a Gargle. It hath since also been found of excellent service in cacoethic Ulcers of ye. Legs & other parts of ye. body given both internally & applied externally. There are perhaps no disorders wh. come under ye. notice of a physician more tedious & troublesome than these kinds of Ulcers, and it frequently happens yt. after a physician hath employed his utmost efforts to cure them & failed in ye. attempt, some old Woman will attempt & effect a cure. ~~This~~ They very frequently for ye. purpose make use of ye. diff. kinds of Dock; which appear indeed particularly calculated for ye. purpose; for ye. possess a certain degree of Acrimony wh. ye. astringency; by which when they are applied externally they keep ye. ulcer clean at ye. same time ye. they remedy ye. relaxation which generally takes place over ye. whole system; and when given internally they not only act as very gentle astringents, but also by stimulating ye. excretions both by sweat & Urine go take off ye. determination of ye. fluids to ye. ~~Skin~~ Ulcer, restoring it to the Skin, and thus are particularly calculated to answer ye. Indications of ye. disorder. This use should however be continued for a considerable time, and large quantities of ye. decoction drank daily, at ye. same time ye. ye. Ulcer is fomented & washed wh. it several times a day. —

Felices; Ferns. These were formerly much employed in Medicine; of late however there are but few & these seldom used. They have been recommended for ye. cure of Worms; but I imagine their Virtues in these cases cannot deserve much attention. They have likewise been prescribed for ye. cure of ye.

Rickets, spasmodic complaints &c. In all these cases they act as simple astringents, but have no peculiar Virtues for wch they deserve a preference to those in common use. The maiden hair or capillus Veneris, hath been at all times recommended on account of its pectoral Virtues & prescribed for ye cure of Consumptions made into syrup: but I imagine tho it hath acquired ye character upon a very slender foundation. Many other Virtues have been ascribed to them; but from their being now in a manner totally neglected we may rationally conclude, ye they were not found to answer ye expectations physicians had formed of them —

Lychen pyxidatus, Cup moss, This grows in every barren & rocky mountain. I insert it here on ye authority of Dr. Willis, a Man of great practical knowledge, but who on account of his exploded theories, is not so much read & studied as he deserves to be. He recommends it in ye Chincough, in which old Women frequently do more Service than ye Physician; and Willis tells us it is chiefly by employing ye Cup Moss. It is a simple astringent without either smell or taste & may therefore be given to children, when they cannot be prevailed upon to take a sufficient quantity of ye bark wch hath been recommended for this disorder by Dr Burton. The Chincough is a disorder that hath not been very long known in Europe; and was probably first imported from ~~ye East Indies~~ Asia or Africa, as well as ye Small pox & Measles. It appears not to have been observed in France before ye year 1414. From this it is evident ye ye disorder is not owing to any acrimony, mucus or other cause in ye lungs or stomach; for in this case it would have been observed in Europe from ye earliest ages. The quantity of Phlegm & Mucus wch Children vomit up during ye disorder is rather ye consequence than cause of the disease; & seems to be owing to ye irritation accompanying it, in ye same manner as an ~~final~~ emetic

vacuation of Mucus is produced by y. Irritation of a Calculus in y. Bladder.
The Chincough is also an epidemical disease, and has frequently been observed to
be ~~infectious~~ contagious. The Infection however only attacks Children, who
have never had y. disorder, & may be communicated in the same manner, by one person to another,
as y. Smallpox. In like manner as Persons who have ~~once~~ had y. Small
pox & Measles need not be any farther apprehensive of them, a person
who hath at any one period of his Life been troubled w.th the Chincough
need never dread ~~the~~ another attack from it. Of this I was assured by
Gentlemen of great Eminence in Sweden, who had never during 32
years practice met w.th a single ~~Instance~~ Instance of a persons having had
y. disease more than once. And tho it sometimes happens y. a common
Catarrh very much resembles y. Chincough in many particulars, yet
a attention to y. following history of y. disorder will always sufficiently
distinguish y. one from y. other. The Chincough is sometimes atten-
ded w.th a fever, at other times ~~there~~ are no evident Signs of it, but it
always worse every other day. It becomes on by degrees and y.d ~~night~~
night is almost dry; but 10 or 12 days from y. first attack it is attended w.th
an expectoration of a yellowish phlegm. Notwithstanding w.th it still con-
tinues to encrease, tho it is easier at particular times, and is generally
so violent, y.t y. Child turns black in y. face from coughing, y. eyes seem
ready to start out of y.r Sockets & swim in Tears; may sometimes y. blood
issue from y. Nose; it appears as if y. child would even threatened w.th
immediate suffocation & it makes upon every Inspiration a particular noise.
The ~~cough~~ fit of coughing continues untill y. child hath vomited up a

a co
turn
atte
to y
Com
Chil
for
as o
only
disco
we ha
in fa
left
some
God;
Ord
Chil
mille
serm
Cam
Dego
Ruei
Ortle
mitte
ab
ir 4
one

a considerable quantity of Phlegm. If y. fit goes off without ~~cough~~ Vomiting, it returns speedily again & continues until y. Vomiting comes on. If y. paroxysm attacks y. child immediately after dinner, it turns blue in y. face, sinks to y. ground & ~~unless~~ may suffocate, unless we immediately excite a Vomiting by putting y. finger or something down y. Child's throat. A Child should therefore never be suffered to be without a constant attendant, for unless they can lay hold of a chair, Table, or any thing else y. may serve as a support to them, they generally fall down & hurt themselves. As we only know y. y. Cause consists in a contagious Miasma, we have not yet discovered an effectual method to prevent or cure y. disease, no more y.n we have in y. Small Pox & Measles. Our Cure therefore consists chiefly in palliating y. disorder & shortening y. course of it. It sometimes when left to itself lasts for 11 or 12 Weeks, and even for 6 Months; it destroys some Children by suffocating them; others by occasioning Vomitings & spittings of Blood; others die consumptive some fall into a dropsy. As it is a convulsive disorder & of y. spasmodic kind, we should in Children of a full & gross habit of body take away some Blood; frequently give the Child gentle Vomits, particularly on those days y. they find themselves better; order warm fomentations & in y. beginning of y. disorder Infusions of Musk, Camphor & other antispasmodics; & when all Symptoms of Inflammation are gone off and y. disorder brought to some degree of regularity, we exhibit y. Bark if we can get y. Child to take it, and if not we then substitute y. Cup Moss, w.h as I before observed is a simple Astringent of either taste or smell; & if this is not at hand some other Vegetable Astringent may be employed. If y. method will not relieve y. Cough, a change of air is absolutely necessary, & y.re are many Instances where changing even to a near air & situation was attended w.h speedy relief

All unripe fruits, or such as have naturally an acerb taste, may be numbered among adstringent Medicines. Many of them have been at diff. times employed in Physick; we may use the any one of them that may be had w.th least trouble & expence. Of these the common Sloe or prune sylvestris is perhaps equal to any of y.e more costly ones. The best preparation is to make a Roob, in y.e same as y.e Robb of Elder is generally prepared, and it may then be applied as an adstringent in those disorders, where other Med.s of this Class are at least attended w.th doubtful effects; particularly however in y.e Dysentery. This disorder requires Medicines, y.t after proper evacuations, will gently brace y.e relaxed tone of y.e Intestines, & at y.e same time correct or resist y.e putrefactive tendency that takes place in y.e Bowels. For this purpose nothing can be better calculated than moderate doses of the inspissated Juice of Sloes, when adstringent Med.s are indicated; for this will not only restore y.e proper tone of y.e Intestines, but like all Vegetable fruits, greatly contribute to correct y.e morbid matter lodged in y.e Bowels. Acerb fruits are not so liable to an active fermentation in y.e stomach, by w.ch the ripe sweet fruits often occasion a diarrhoea; on y.e contrary these acerb fruits will tend to check Evacuations of every kind from y.e bowels. An Infusion of the Leaves hath been much recommended as a Gargle in relaxed & spongy Gums & to fix loose teeth; this Gargle is likewise very useful in an Angina of the throat, arising from laxity; in this case we generally add a little honey to it to render it more detergent. — ~~The~~ An infusion or Syrup of y.e flowers gives us a very gentle Laxative, much preferable either to Manna or the Syrup of Buckthorn —

Berberis. Berberry. This is a most excellent fruit & highly useful in many disorders and at the same time very grateful to the taste. It may be used either as a juice, syrup or jelly. It is particularly indicated in all disorders owing to or attended with a putrescency & disordered state of the blood; for in these cases acids combined w.th a slight adstringency will answer every indication; & such a Remedy we have in y.e Berberry. Prosper Alpinus, who was himself a very eminent physician & hath wrote many excellent treatises in Medicine, particularly a book de prorogenda Vita & Morte, was perfectly cured of a malignant fever attended with a bilious diarrhoea, when his life was despaired of, by y.e use of this remedy; & Simon Pauli another physician of eminence was recovered from violent fever with a diarrhoea by drinking plentifully of this syrup diluted w.th Water. ~~and drank~~ A plentiful use of this juice or syrup is excellent in all kinds of fevers, dysenteries or choleras y.t are attended w.th symptoms of putrefaction. Pauli writes from his own & y.e observation of others recommends y.e inner bark of the Shrub as a hydragogue, and confirms ~~the~~ its use in dropsy by his own experience.

Inspissated Juices

The Succus Acaciae & Hypocistis are now scarce known to many physicians by name; by y.e accounts which are given of them by medical Writers, we may judge that they are simple & pure adstringents; but not possessed of any peculiar Virtues that might render them desirable —

Terra Catechu or Japonica This substance is w.th great impropriety called Earth, for it is a agreeable inspissated Juice of considerable efficacy. It is prepared from y.e unripe fruits of y.e Areca Palm tree, w.ch are cut into small pieces & boiled in Water for y.e space of 18 hours; a small quantity of

is then added by which it acquires ye. reddish colour, after this the Juice is expressed & the faces are dried for use. It is a substance of but no smell & rather of an agreeable taste; it is chiefly used in a Lepity & resolution of ye. Gums and in Diarrhoea & dysenteryes. It is by many of the French Gentry chewed to make ye. breath agreeable & to assist digestion. It is one of ye. strongest & most agreeable Vegetable astringents, and may therefore be given either in substance or solution from ℥ss to ℥ss for a dose, in those cases where Astringents of this kind are indicated; we may prepare an agreable & efficacious drink by dissolving ℥ij of ye. Tetra Japonica in ℔xv of Water.

Sanguis Draconis. This hath from times immemorial been always considered as a very strong & efficacious astringent, & particularly recomended in every species of Hemorrhage, probably from its resembling blood in colour; but as it is a substance not soluble in our fluids, at least in any quantity to produce considerable effects in the system, we may take it for granted that it does not deserve to be employed as a Medicine. The only use that I know for it, is that it affords a proper Vehicle by wch. we can form Alum into Pills, and in ye. manner recomended by Helvetius.

Hypericum, St. John's Wort. This was formerly much esteemed as a Medicine & still continues in great repute wth. ye. Vulgar, tho it is now banished from our prescriptions. From its taste it appears to be an astringent, & more over is impregnated wth. a very subtile essential oil, contained in little holes or cells, similar to what we observe in ye. Rind of Oranges. It acts frequently as a powerful diuretic. The oil of Hypericum hath been much recomended in epileptic & maniac cases; but it is difficult to explain upon what principles it can act in these cases

Lysimachia or Salicaria. De Haen in his ratio Medendi, tells us ye. he as well as Van Swieten, had used it. it seems in ye. Dysentery. After proper evacuations by purgatives he gave it in doses of ye Night & Morning, says ye. in a recent dysentery it will cure in 3 days; & chronic dysentery ye. had resisted ye. powers of every other Medicine was cured it. in 3 weeks; and it is chiefly in chronic dysenteries ye. De Haen advises it. With regard to ye. general use of Astringents in Dysenteries, Authors & physicians frequently entertain quite contrary & opposite opinions. Some adore them & recommend them it. much confidence; whilst others as vehemently decry their use. — Dysenteries may be said to be either acute or chronic, they differ particularly in this respect that the former are always attended with a fever; whilst ye. latter, tho sometimes a symptomatic fever accompanies them, are in general free from fever. In the former there is also now evident signs of putrescency in ye. bowels & it frequently terminates in Mortification, its course is generally not above a week or fortnight, sometimes much shorter; whilst ye. chronic dysentery frequently lasts many months and is not attended it. such evident signs of putrescency and tendency to a Mortification as ye. acute. — There can be no doubt but what these different species of Dysenteries require a very different treatment & method of cure. The former should be treated much in ye. same manner as putrid & malignant fevers, by gentle Cathartics, diluent acidulated & antiseptic drinks, it. anodynes in ye. Evening to compose ye. patient & relieve the Tenesmus. For there is not ye. least Inconvenience from giving an Anodyne in ye. Evening, after proper Evacuations in the day. & I have frequently seen Dysenteries cured it. out ye. use of any other

Medicines, than gentle Laxatives & Anodynes. We give the former every Morning, and order y. ~~th~~ latter at Night. By Anodynes also y. determination of y. fluids is restored to y. Skin, which will have a very great effect in curing the disorder. But to be better ascertained of this we may combine a little Ipecacuanha or Tartar emetic w.th y. Opium; by w.ch we shall be more certain of a gentle Diaphoresis. For Emetics ~~combined~~ w.th Opium afford ~~th~~ us y. most powerful Sudorifics. But chronic Dysenteries without fever may be treated in a different Manner. Here we likewise endeavour to restore y. determination of fluids to y. Skin; for untill this is accomplished every attempt ~~&~~ effort to remove the disorder will prove fruitless. Anodynes in this case are commonly not only ineffectual but frequently hurtful by increasing y. general relaxation of y. system & particular debility of y. stomach & Intestines, and our Cure must be absolved by gentle Astringents combined w.th Rhubarb & Calomel to warm y. Intestines, stimulate y. Glands to a copious secretion by w.ch the Bowels are well cleansed, and again strengthen the relaxed tone of the Intestines. It is by the ~~Method just laid down~~ ~~means only~~ that an effectual cure of the disorder whether acute or chronic can be performed, & in this manner we may also account for the seemingly jarring Opinions of Authors w.th regard to y. Use of Astringents in Dysenteries. They can certainly do little good & frequently much harm in an acute dysentery, w.ch may w.th Sydenham be considered as a continued fever ~~thrown~~ upon the bowels; & in which y. whole system is disordered; whereas a chronic Dysentery may more properly be considered as a disorder of y. bowels, & our method of cure be instituted accordingly.

Plantago, Plaintain: This is undoubtedly a very weak astringent; but hath in all times, ages & Countrys been employed for ye. cure of different disorders, both by Physicians and ye. common people. A decoction of the plant is recommended in Hemorrhages; & Dr. Clerk a physician of great eminence & practice in Edinburgh assures us he often found Plantane effectual in Evacuations of blood, when seemingly more efficacious & stronger Astringents were not attended wth. Success. An Infusion of the Leaves is also recommended in the Sputa albus: Celsus recommends a decoction of the Leaves for consumptive people &c. is confirmed by Dr. Schultze professor of Medicine at Halle, who tells us that by frequent Trys. he is convinced that Celsus's observation is well founded. The celebrated Mr. Boyle also assures us that two Women were perfectly recovered from Consumptions by taking two table spoonful of ye. expressed Juice of Plaintain Leaves every Morning, for ye. space of two Months. I give you these facts on the authority of ye. Gentleman just quoted, I confess I merely unable to account for its Utility or operation in these cases. It is in this Country amongst many other things employed for ye. bite of Rattlesnake or other venomous Serpents, and I have been assured by persons of unquestioned Veracity of its having cured the bite wth. out the application of any other remedy. It is employed in decoction, & drank plentifully ty. some time, & the Wound is continually fomented wth. it. I make no doubt but this application or indeed fomentations of warm Water, without any addition may be sometimes effectual in curing ye. bite, but I am also well assured that it is only in particular Instances, & that in some cases no remedy will save the patient. The fact is this: Whenever the bite is inflicted

immediately into a Vein, by w^h the means ye poyson is directly conveyed to the heart, no human effort can secure the patient; but if ye Wound is inflicted into any of ye muscular parts, & particularly at a distance from ye heart, & must first be absorbed before it can mix w^h ye blood & circulation, there is seldom much danger from ye Wound, & ye most simple remedies, particularly warm diluting drinks & fomentations by w^h ye patient is thrown into a diaphoresis, will be a sufficient Security against it; for the danger from ye bites consists entirely in ye immediate mixture of ye blood w^h ye poyson. This is illustrated by a fact & observation communicated to us by Mon^r. Redi, a Venetian Gentleman, who wrote a Treatise de Venenis Animalium. He tells us that a Society of Gentlemen were making experiments w^h ye Venom of Serpents in ye presence of ye Emperor Maximilian, and had for ye purpose collected some of ye poyson in a glass, which one of ye Company to ye astonishment of every bystander drank it without any ceremony, and did not receive the least injury or feel any Inconvenience from it. Since that time it is a fact universally known y^t ye Poyson of Serpents taken internally is not attended w^h any bad consequences: This is further confirmed by ye method ye Inhabitants of Asia & Africa employ for ye cure of ye bites of ye most venomous Serpents. For the first person on being bit by a Snake immediately applies to someone to suck ye Wound, w^h draws the wounded person, without doing any Injury to the other, unless he hath sores or Ulcers in ye Mouth. These Instances evidently shew y^t the danger from a bite consists entirely in ye mixture of ye Venom w^h ye Blood, & y^t the danger is not near so great when ye poyson is carried to ye Blood in consequence of a previous absorbtion, nay we see y^t mixed w^h ye Blood, after passing through ye Stomach, it is altogether innocent & harmless.

Polygonatum; Solomons Seal. The flowers, Berries & Leaves of ye plant are of an acrid & severe purgative nature; the Root is mucilaginous wd a certain degree of astringency, and is the only part proper to be employed in Medicine. The root is particularly recomended & employed for hemorhoidal swellings & bleedings. The dose is ℥ss boiled in a pint of Milk, untill one half is consumed, wd is to be taken in ye Evening & said to be effectual in removing the pain & swelling. Various astringents have been recomended for the same purpose, ~~and~~ but we must lay it down as a rule without exception that whenever this evacuation is critical, or even by time become habitual to the system, it will be always dangerous, to make use of any remedies ye may have a tendency to check or repel it. Some physicians have considered the piles as a natural necessary evacuation, answering the same purpose in Men as the Menses do in Women; but this opinion is altogether erroneous & not defensible upon any rational principles. For we observe Men who enjoy ye greatest share of health altogether free of ye evacuation; and we frequently see Women troubled & afflicted in a very high degree wd ye piles, at the time and even during ye course of their Menses. The first appearance of the hemorhoids may always be considered as a morbid, & ye consequence of some obstruction in & about ye Vessels of the Rectum; true it is, that after ye piles have frequently made their appearance in ye same person, & by ye Laws of ye System become in a manner a necessary evacuation, it will always be dangerous to suppress them & we must then consider them as a necessary evil: This however is not always the case; & we may in general observe therefore: that when they are brought on by a habitual costiveness, by which ye free circulation & return of ye blood towards the heart is impeded; in consequence of

of which it is found out into ye. cellular membrane, then forming Swellings & Ecchymoses, wch. are continued by ye. laxity of ye. parts, Astringents may be used & taken internally as well as applied externally. For here there is no varicous distension of the Veins to contraindicate their use But when the pulse are owing to a general or partial plethora, and thus become a necessary & healthy vacuation we should always refrain from ye. use of Astringents & at least before & during the discharge; but I perceive no disadvantage in preventing ye. return of them, by using moderately astringent Medicines, by wch. we ~~prevent~~ give time & strength to ye. Pulse & prevent the future accumulation of blood in the parts; we must ~~how~~ however never neglect ye. observation which I have so often repeated to you; ye. it requires ye. utmost caution & prudence how we check evacuations of every kind ye. have once become habitual to ye. System.

Sedum or Semperviverum. Houseleek. This is a very moderate astringent combined wth a mucilaginous quality. Boerhaave tells us ye. Bye of ye. ~~leaves~~ Juice ~~drank~~ off at one will frequently cure ye. dysentery. Boyle recommends ye. Juice mixed wth Honey to be applied to ye. tongue & fauces of children ye. have the aphtha or thrush; in which it often affords considerable relief & indeed answers extremely well in all inflamations of ye. Throat & fauces, as it is mild, bland & mucilaginous; cooling & acting as an emollient. A poultice of ye. Leaves is frequently employed wth good effects by ye. common people in burns & scalds. In ye. phil: trans: of Breslau ye. Juice of ye. plant is recommended to take off films ye. grow on ye. Eyes of children. Poultices of it are also applied & recommended for ye. cure of Corns: it hath been an improper practice to use acrid applications in ye. cure. the emollient are undoubtedly proper; for by mollifying ye. neighbouring parts ye. Corn will separate & readily come away.

Notice

or y.

inform

Rome

this a

for y.

& for

y dim

detro

Your c

endeav

make

y. infl

much

its effe

tability

bond in

for a

are in

hath gen

queen

or any

Loss is

siderable

Urtica: Nettles. These are when young employed in food; A strong decoction
or ye. seeds left boiled is often suddenly effectual in taking of ye. swellings
~~pain~~ occasioned by ye. piles. An infusion of the leaves is also recommended
in consumptions. The juice of ye. plant hath also been recommended in ye.
dropsy; if it should be found useful in this case; it hath at least
this advantage that it may be employed w. great safety. Nettles are remarkable
for ye. effect in burning & inflaming the part to which they are applied;
for ye. reason frequently employed in a torpor & paralytic affection of
the limbs in order to excite ye. animal fibres to contraction & encrease ye.
determination of blood & nervous power to ye. part. This is called urticatio.
If we examine ye. plant carefully we find it is furnished w. numberless points
resembling a fluid: these on striking ye. plant against any object, break &
make a small puncture into w. they at ye. same instt. ye. liquid ye. cause
inflamation. — Viscus quercus This Medicine hath been at all times
much comended for ye. cure of ye. epilepsy, and many treatises wrote to prove
its efficacy in this disorder. When an epilepsy is owing to an encreased fri-
bility & Mobility of the System, astringents may undoubtedly cure ye. disorder.
and in this case ye. weaker astringents, such as Mistletoe, are ye. most proper;
for as the change should be made very gradually, ye. powerful & strong astringents
are improper. The Mistletoe grows on various trees; ye. taken from ye. Oak
has generally been esteemed to deserve a preference; but it is of no conse-
quence from what tree we take it whether it be ye. Maple, Apple, Oak
or any other tree. The chief of its Virtue resides in ye. bark; ye. proper
dose is from ℥ss to ℥j ~~a day~~ twice a day; we must persist for a con-
siderable time in its use, & then we may expect happy success

Uva

Uva Ursi, a species of Arbutus, hath been lately recommended as an excellent re-
medy in calculous concretions and other disorders of the Kidneys & Bladder.
Linnaeus was ye first who recommended it in these cases, since which
many accts made by Dr. Deshahn in the Hospital at Vienna confirm
its utility in these disorders. The cases of ye persons who were relieved
by this remedy are published in his ratio medendi, to which I refer you
for a more particular account, than can be given in this place.
From those it appears ye the Uva Ursi hath not ye power of dissolving
the stone; but that it mitigates the pain; enables ye person to retain
his Urine, changes ye bad quality of this from a purulent alkaline
nature to its proper state, and gives it a natural sediment. From
a great variety & number of cases it appears that the Uva Ursi is frequently
attended with very good effects in all suppurations of ye urinary passages,
whether they be owing to ye venereal infection, whether in the Kidneys,
Ureters, Bladder, Urethra, Scrotum & Perineum, tho not accompanied
with any signs of a calculus being present; these disorders were often
perfectly cured by ye use of this plant. — Those who ~~were troubled w.~~ had a
calculus, ye was evident upon sounding w. ye Catheter, generally ~~cured~~ were
greatly relieved by the use of this medicine, tho the stone was not
in the least changed by it either in size or figure. They were sometimes
altogether freed from ye pain commonly attending this disorder; at other
times the pain was greatly mitigated & rendered tolerable, they could
retain & make their water with ~~out~~ any uneasy sensations; Lepatis
lately gives us the history of a Gentleman 80 years of age, who ~~for~~ for
30 years frequently voided small stones, much gravel, tough mucus w.
exquisite torment. He had the ~~for~~ advice of many of ye first physic

cians in Europe, but never experienced the least relief, untill he had recourse to this Medicine. In many cases also where Lithotomy could not be ventured upon, this remedy gave relief & in one Instance where y. operation was performed but y. Stone could not be extracted, this medicine relieved all y. Symptoms & rendered life comfortable. The Manner of giving it w. the effects it produced will be best understood from the following History of a person afflicted w. the disease. A Lad eleven years of age was brought into the hospital, who from the testimony of his parents appeared to have been for four years afflicted w. intense pain on making Water, which came from him in drops. It collected in a glass ~~was~~ mixed w. much mucus, and was very fœtid. He had likewise voided two stones of y. bigness of a pea. Upon sounding him with the Catheter ~~the~~ calculus was both heard & felt in y. Bladder. He took twice a day half a drachm of y. powder of the Uva Ursi and an anodyne at Night. In four days his relief was so great, that he scarce had any sensation of pain; he retained his Urine much longer & in a short time was entirely free from ~~any~~ y. symptoms accompanying a calculus; so that in a Month from the time of his admission he was discharged cured. He continued well for several Months, but neglecting to take y. powders & ~~living~~ using improper diet, all his former symptoms returned. He was again brought to the Hospital and that every thing was preparing for y. operation of Lithotomy he took twice a day ½ oz of y. powder, drank plentifully of Barley Water & whenever the pain was very great an anodyne was given him. He had scarce desisted in the use of this Medicine for 3 days, before his Urine left him altogether & he could retain & make Water as well as the most healthy person; yet upon sounding him the calculus was as evident as before. After a fortnight he again returned home, but

upon
with
ing to
again
Since
days;
contenu
In this
and
It was
colour
was
bowing
lies e
of men
nence
are lee
in the
State
further
Gilbert
Gray
Green
further
convic

upon neglecting the use of his Medicines, all his former symptoms returned with more violence than ever, and he was under ye necessity of returning to ye hospital a third time. The same course of Medicines was again tried and as his disorder was now more obstinate than ever linseed oil was at ye same time injected into the bladder for some days; but on the symptoms being mitigated it was omitted, and he continued to enjoy uninterrupted health, by using ye powder daily. In this case then we observe that ye Uva Ursi was attended w. success, and not casually, for on omitting the use of it his disorder returned, & was again relieved by having recourse to this remedy; whilst the calculous still remained in its original state & form; but the Urine was changed in consistence, colour & quality. The Urine of persons labouring under a calculous is frequently fetid, thick purulent & highly acid of so alkaline a nature as to effervesce w. acids & turn the syrup of violets of a green colour. But on using the Uva Ursi for some time these appearances vanish & it resumes its natural quality. From this we are led to conclude that the pain accompanying calculous concretions in the urinary passages is in a great measure owing to a depraved state of ye Urine & not frequently not at all to the stone. We are further confirmed in this opinion by considering that this state of ye Urine will frequently bring on the same symptoms that accompany calculous concretions, tho there is not the least vestige or appearance either of a stone or gravel. Whilst on the other hand we have instances of persons who on dissection were found to have stones of considerable bigness in the bladder & yet had never any of the complaints that attend these concretions.

I have had an opportunity of attending to the effects of the Uva Ursi in 3 different cases, and am now to communicate my observations to you — The first was the case of a Child, that had a Stone in the bladder; the Uva ursi afforded no relief, & the Stone was afterwards extracted by Lithotomy. — The second was the Case of a Gentleman 80 years of age, who had been for several years afflicted with nephretic Paroxysms, these afforded ye strongest presumption of his having a Stone in the bladder, but as he never ~~would~~ wished to be certain of a disagreeable a truth the only sure method of ascertaining it by sounding him, was not put in practice. — A Variety of remedies were tried to give him ease & several afforded him temporary relief; but the return of his paroxysms was not prevented. The Uva ursi was at length tried in a strong infusion, and the pains abated in twenty four hours from his using it. He however continued in the use of the medicine & was fully convinced that ~~the Medicine~~ it was highly useful to him — It did not however prevent the return of his paroxysms; for he continued subject to repeated attacks during the remainder of his life. The third was the Case of a young Gentleman, who had been for several years subject to nephretic pains for which he had tried variety of remedies & amongst ~~the~~ others the Uva ursi was recommended to him by a Physician in this place

If the Symptoms then were at all times owing to the Stone only; how could it happen that Persons should carry a calculus in y^e. Bladder for many years, and be so far from feeling any Inconvenience from it, y^t. they are even not conscious of having a Stone. I do not however venture to assert that the pain & uneasy Symptoms are always owing to y^e. Quality of the Urine; ~~it is sufficient~~ I am contented to observe only that this is frequently y^e. case, and that it is particularly in these Instances y^t. the Uva Ursi is effectual in giving relief. We may therefore expect relief from it whenever the Urine is fetid, purulent, acrid & alkaline whether it be owing to or attended wth. calculous concretions or not; it may therefore be of service in particular Instances where Lithotomy would be ineffectual; for by acting on y^e. Organs that secrete Urine & giving them a proper tone & strength, y^e. secreted fluid will be of a proper quality, & not productive of y^e. effects that urine of a bad quality will be seen to produce. It is probable that Astringents wth. Lime in all ages of physick been recommended for these disorders, if only in this way, and I even think that y^e. good effects of Lime Water are to be attributed in a great measure to its operating much in the same manner. For Lime Water will frequently relieve the Symptoms, tho it hath no evident effects on the calculus. ~~that~~ Physicians indeed ~~have~~ upon observing that y^e. Urine of some persons who drank plentifully of Lime Water would dissolve Stones out of y^e. body, concluded y^e. effects would be similar in y^e. body; this however is by no means a fair argument, for we frequently find y^e. particular Substances will produce effects altogether different out of y^e. body to what they do in y^e. body; may it hath been observed that y^e. Urine of calculous persons, who did not drink Lime

but this Patient was fully convinced that instead of mitigating it increased his Complaints.— Upon the whole therefore I am a loss what judgment to form of the use of this remedy in this disorder; for even the case related by de Haehn is rather ambiguous, as the Paroxysms returned sundry times, & were always relieved by the boys being brought into the hospital, as was perhaps as much owing to the regimen he was put under, as to the medicine he took. By some experiments lately made & published at Edinburgh on ye various substances employed as Lithontripticks, it appears that ye Uva Ursi infused in Urine in which a piece of Calculus was placed, instead of diminishing added to the weight of the Stone, whilst the Acid of Vitriol was powerful in dissolving it.— It is probable however that the Uva ursi ~~may~~ will prove useful in particular instances & under certain circumstances, in the same way as Limewater, which tho it often fails, it yet on some times of service.— The late Mr. Walpole is an instance of this; he published his own case, by which it appears Limewater effectually relieved his ~~Complaint~~ nephritic complaints; ~~but &~~ yet on opening his body after his decease, a Stone was discovered in his bladder.—

Of all the substances that were tried on ye human calculus out of the body it was found that ye Acid of Vitriol mixed with water had ye most powerful & c

Water would nevertheless be attended with the same effects of dissolving the calculous concretions out of ye body.—

The Cortex Granatorum & Pomegranate & Quercus Oak bark are both very strong simple Adstringents, and for this reason principally used for ye Arts of tanning. As they are cheap & strong they are well calculated for external applications e.g. In a procidentia Ani, to strengthen ye relaxed parts. For this purpose we should always make use of cold applications; for if we employ warm fomentations, the heat will relax as much on ye one hand as the adstringent braces on ye other & we shall be frequently disappointed in our intention — The An Infusion of ye Pomegranate affords us an agreable & expeditious Gargle in a relaxation of ye Uvula, which the common people call ye falling down of ye palate.

Cortex Simaruba. This is ye bark of a tree of which we have still a very imperfect knowledge. It was first brought to Europe from Guiana in ye Year 1713, when it is held a specific for ye cure of ye dysentery, and was afterwards in ye 1718 employed w. much success in France for ye cure of a dysentery ye was epidemic in that Country. Its effects are to excite Nausea & Vomiting and produce a diaphoresis; but ye Simaruba does not appear to possess any adstringency; tho it hath been universally accounted an adstringent medicine. It is particularly recomended for ye cure of chronic dysenteries. Two drachms of it are boiled in 2 lbs of Water or Beer until ye liquids are consumed: the residuum is divided into 4 doses, of w. one is taken every three hours. We may also give it in powder. It seems to act chiefly as a specific & by restoring ye determination of ye fluids to ye skin w. I have repeatedly told you was our principal indication in ye cure of a chronic dysentery

deed surprising effect in dissolving the stone. I have lately heard of a case that was greatly relieved by an empiric & there is every reason to believe he made use of the acid of Vitriol for the purpose. It certainly deserves your attention & I would recommend it to you to make trial of it, when an opportunity offers. For this purpose 3j. acid of Vitriol should be given in a considerable quantity of water, in order to determine its operation more powerfully to the Kidneys & urinary passages. The following ~~Medicine~~ Remedy has been communicated by a gentleman at Bath who experienced the good effects of it in himself in this complaint, & we are told it has been equally beneficial in others. — half an ounce of Salt of Tartar is to be dissolved in a bottle of water which has been strongly impregnated or saturated with fixed Air; of this the patient is to drink a wineglass full ~~of~~ twice or thrice times a day, & to persevere in the use of it a sufficient length of time. — The Remedy is not disagreeable to the taste, & is perfectly safe & innocent to the system.

The galls which grow on the oaktrees in this Country are likewise powerful astringents & I find are used as a domestic Medicine in obstinate chronic diseases. In a case which I attended some time ago the

Lignum campechense, Logwood, this is likewise employed both in decoction & Alphact as an astringent; it is however an inevitable & much astringent & much inferior to many other substances of this Class; for wh. reason it might be entirely banished from our prescriptions. —

Galla, Galls. These are an excrescence in trees, owing to y. puncture of Insects wh. they make for to lay their Eggs, & every Gall is a Nidus for small Insects or flys. In practice we confine ourselves to those that grow on the Oak, & wh. come to us from abroad. A proof of their astringency is that they are universally preferred for y. making of Ink & also for tanning in those Countys where they have them in sufficient quantity. They are remarkable for giving out their astringency more especially in Solution than any other astringent, & are therefore particularly proper for external applications, particularly in y. Procidentia Ani in Children; the applications should always be cold, for reasons given above. I have seen y. a composition of Galls & Gentian effectual in curing Intermittents after y. Bark had been tried without success. ✱✱

Fungus melitensis. This is a substance wh. is not known in our shops; Limmerich wrote a dissertation upon it in wh. he recomends it highly in Hemorhages; relates several Instances of its use in Hemorhages of y. Uterus y. had resisted every other remedy. It was first brought from y. Island of Malta, & it is said to grow only in one particular spot of the Island, wh. is kept a constant ward is kept, least some person more attentive to his own than y. Interest of the publick, should extirpate & eliminate y. whole. Of late it hath also been observed to grow in y. Island of Jamaica, & Brown mentions it in his history of y. Island. It is recommended in a modern treatise many, by y. Italian physicians particularly in y. Transactions of y. Society of

accomplished a cure after ineffectual trial had been made of
a variety, & amongst others of the gum kino. The me-
thod of using them is this: three galls are reduced into
powder & boiled in a pint of water untill one half
is evaporated; half a pint of old spirits is then added
~~untill~~ & it is again boiled untill it is reduced to
half a pint — of this decoction the patient took some
what more than half a wineglass full three times a
day & was relieved in the course of a few days —
I have been informed that this domestic remedy has
been used with especially good effects in other cases th
had been very obstinate & resisted the medicines usu
ly employed in them cases —

of Bologna in Hæmorrhages of all kinds. It would therefore well deserve a trial in those Cases where ye common methods fail of being effectual: the dose is from one drachm to two, and repeated untill we obtain the desired effect ——— This finishes ye consideration of ye particular substances employed in Medicine as Adstringents; and we are in the next place to take notice of some other Substances, whose principal action is not adstringent, but yet may occasionally prove so, and are sometimes prescribed in that Intention ———

1. Acids may be considered as Adstringents. For if they be applied to the Tongue they will produce contraction & corrugation, & nothing is more common than that even the weakest acids will contract ye Lips to such a degree as to deprive them of ye redcolour & ~~Shrink~~ prevent them from receiving ye same quantity of blood, which they do in a natural state. All the fossile acids possess in a great measure the same Virtues, and differ only as to their astringent effects, in ye different degrees of concentration; but there is a considerable difference between these & ye Vg: acid; for this is liable to undergo a fermentation in the Stomach, by wch it is changed from its original nature of an acid, whereas ye fossile acids resist fermentation of every kind & are not subject to any change or alteration in ye prima via. The fossile acids likewise stimulate ye diff. organs of action & in consequence of this produce more conscious operations; whereas the Vg. acids will not be attended with such effects unless they are given in a large quantity. There is even a considerable difference in this respect between ye various species of Vg: acids: The native Vg. acids as they have neither undergone ye vinous or acetous fermentation are subject to both in ye prima via; from wch. however ye fermented Vg. acids are free

The mind
shapes, a
are imp
Sedative
of which
of impeter
Whereas
blood o
other c
fully w
2. Barter
is entir
mentation
then pro
by stewa
fermenta
kind of
for other
any Ve
on the
liquid,
of in
Degree
fed on
if they
body

The mineral Acids may be employed with great safety & advantage in Hæmorrhages, when ye pure adstringents, on account of ye stimulating quality are improper. For ye fossile acids wch ye adstringent virtue posses also a sedative quality, by wch they at ye same time diminish ye mobility of solids & impetus of ye fluids, ye they give contraction to ye animal fibres. Whenever therefore it is proper & necessary to check any evacuation of blood or hæmorrhage, wch is at ye same time accompanied wch fever or other circumstances ye render ye exhibition of common adstringents dubious, we should prescribe the fossile acids.

2. Austere Wines may also be considered as astringents. Their act by ye acidity wch enters into ye composition; and tho they have undergone ye vinous fermentation, yet they are in our stomach subject to ye acetous & may then produce ye same inconveniences as ye native Veg: acids. But by stewing them their austerity is increased & they become less apt to ferment. We can lay no great stress on ye adstringent virtues any kind of Wine possesses; and these Wines are rather proper as Vehicles for other more powerful substances, than to be depended on for any virtues they can exert in the system in checking of evacuations. In those cases indeed where we require an antiseptic and acidulated liquid, ye red Wines are very proper, for instance in Dysenteries; for if in this disease they should turn sour on ye stomach & in consequence of that prove purgative, they would perhaps be more useful on that account; and they will generally be attended wch this effect if they are taken in any quantity; when instead of binding the body they become purgative.

3. C

Lay

by

Ad

Some

ate

ty

Ap

5. D

are

g. u

in la

we c

to a

likew

in th

they h

a slig

contra

Execu

have no

stones

render

purpose

or wh

3. Bitters, as stimulants may also operate as astringents; for whenever laxity takes place, and evacuations are owing to relaxation, Bitters by giving a temporary tone to y. parts, will act as astringents.

4. Sedatives may also occasionally prove astringents; and indeed are sometimes necessary, by diminishing y. impetus of y. fluids, to afford a temporary relief; they are also particularly indicated & co. propriety combined w. astringents whenever the disorder is owing to irritation & spasm.

5. Balsamics as astringents. These are taken notice of here as they are frequently prescribed in an increased evacuation of Mucus from y. urinary passages e.g. in Gleets & Gonorrhoeas. But when they are given in large doses they prove excellent laxatives, & we shall indeed when we come to treat of them under y. head of stimulants find that their effects are quite opposite to astriction. They ~~indeed~~ do undoubtedly often check Gleets & are likewise frequently serviceable in a fluor albus; but I imagine they act in these cases much on y. same principle as Cantharides, for as they have a natural tendency to y. urinary passages, they will excite a slight degree of inflamation, by w. they stimulate y. glands to contraction & thus frequently cure y. disorder.

Exsiccants have also been considered as astringents; but strictly speaking they have no claim to y. title & we mean by y. term such remedies or rather substances as will absorb the too great moisture in any particular part & thus render it dry; but is not having any effect to diminish y. secretion; for this purpose we make use only of dry insipid powders e.g. Chalk or Boles; or what answers the purpose full as well if not better, Oatmeal.

We may
so mad
would
would
not con
super
We al
human
& pit
is an
such o
when
q. sai
Repli
Some
applica
q. mo
for the
only the
will al
ed. q. Sa
time
the Cas
it is o

We may therefore employ substances of this kind when the perspiration is so much encreased in any particular part, as to become disagreeable. It would be highly dangerous to apply such substances in these cases as could have any tendency in checking the secretion; and the only thing we can do is to use such applications only as will absorb ye. superfluity of moisture, wt. out acting either as repellents or adstringents. We also employ them sometimes in the Erysipelas, to absorb ye. humour exuding from ye. skin, wch. as it is of an acrid quality inflames & pits ye. adjacent parts & serves to spread the disorder. The erysipelas is an affection of ye. rete mucosum & attended wt. inflammation, & seizes on different parts of ye. body; it is generally of little consequence when ye. affection is confined to any of ye. extremities; but if it attacks ye. face, head or breast it is always accompanied wt. imminent danger. Repellents are highly improper, for they may throw the disorder on some of the internal parts & soon destroy the patient. No external applications should therefore be used except such as will only absorb ye. moisture wt. out producing any further effects; ye. properest substance for this purpose is Oatmeal, as it is not so apt to form a hard crust on ye. skin as ye. powder of Chalk, Boles & others commonly applied; it will also frequently give great relief, when spirituous, oily applications & ye. Saccharum Saturni have proved ineffectual, and at the same time need at ye. risk of destroying the patient. We should apply the Oatmeal on a cloth, for it will then answer much better than if it is only strewed loosely on the affected parts ——

We cannot
general
a Revieu
I defire
filoc; &
the mor
effects
one im
what c
well kn
I explain
that a
in Lepr
For f
manner c
cur if
a Work
whatever
diseaus
can int
by Physic
been gr
universal
mined
ded to th
credit
any Ob
in the
I affirm
that gre
of Ma

We cannot better employ the remaining part of this hour, than by taking a general Review of what hath been said upon this Class of Remedies. — Astringents I defined to be such Remedies as increase the cohesion of the simple fibre; & but ~~are~~ have a much more extensive ~~action~~ operation, by their action on the moving fibre or solids vivant, by which they produce very considerable effects on parts at the greatest distance from those to which they are immediately applied, & in a much shorter space of time than what could possibly happen by means of the Circulation. From this well known & universally established effect of Astringent Medicines I explained to you their various Uses in Medicine; with the Cautions that are necessary in their administration. 1. They are indicated in Laxity of the simple Solids; if this may justly be called a disease. For I told you that Laxity & Rigidity of the simple Solids, was in a manner constitutional, & therefore little under the power of Medicines; but, if it might be remedied by Exercise & diet, that any alteration was work of time & not to be produced by a few Doses of any medicine whatever. Physicians formerly, & many at this time, attribute various diseases either to laxity ~~of~~ or rigidity of the simple Solids: this Notion was introduced into Medicine ~~to~~ when Mechanics came to be applied by Physicians to account for the functions of the human body: Boerhaave greatly improved the opinion & through him it since became universal: But since later Physicians have more accurately examined into the Laws of the human oeconomy & particularly attended to the Nervous system, which may be called the Soul of it, the absurdity of the former opinion was to manifest to continue any longer to be supported; unless by a few who were rivetted in their ancient prejudices, & shut their Eyes against the truth. ~~2. Astringents~~ The only Instances of a morbid laxity of the simple Solids that occur to me at present are: 1. From too long continued application of Emollients to a particular part, a partial relaxation of the simple fibre may be brought on

2. In the
case th
parts o
is fain
which
formed
in ad
and m
3. Sey
than D
lied in
Cause.
blood.
and that
tion, o
former
the latt
Stimulat
mulatin
frequen
and th
we ord
and sh
so as to
do not
should
for if
we shou
or total
most im
Quinin

2. In the Kidneys, which there are Instances of so total a relaxation as
even to bring on a dissolution of the bones. and 3d When the
parts are overstretched & by that means the Tone is destroyed; which
is similar to what we observe in Catgut or any elastic substance
which by being stretched beyond its elastic power, will not recover its
former degree of elasticity. — 2. Astringents are indicated
in a debility of the moving fibres. — This frequently takes place
and may be brought on in a moment as well as in a year. —
3. They are indicated in an increased action of the Solids, whenever
this depends on Irritability or Mobility of the System. Hence their
use in all convulsive & spasmodic diseases that are owing to this
cause. — 4. Astringents are indicated in increased evacuation of
blood. — These I told you could in general be referred under 3 heads.
and that they are either owing to Debility or relaxation: to mobility or Irritability,
& to an increased action of the heart & arteries. In the two
former cases Astringents under proper management are useful; in
the latter Instance they are always improper. When we employ
Astringents for to check an hemorrhage, we should employ the least stimulating, of this kind I told you was Alum in Substance; or what
frequently answered better, Alum whey; which is also one of the strongest
and the purest likewise something of a sedative quality; but when
we order astringents with a view to prevent the return of a hemorrhage
we should give the weaker Vegetable Astringents, and in small doses;
so as to bring on a very slow & gradual addiction, by which we
do not endanger either the life or health of the patient. — We
should also be attentive in examining the cause of the evacuation;
for if this be owing to a suppression of any of the natural evacuations,
we should by all means restore that, before we can check
or totally suppress the hemorrhage with safety. — It is also of the very
first importance to keep the bowels open; we should therefore guard
against the natural effect of Astringents in rendering the body costive.

It is
to occa
part w
that dis
shapes; a
in a
determ
only
and
in the
is nec
that the
being
blocks, a
then valu
of this
kind
may be
as by
rate in
them
Geometer
worked
cases
the form
greater
encrea
gether
kries

It is also of consequence to give the fluids a new determination; or to occasion an irritation in some parts at a distance from the heart whence the vacuation takes place. — It is on this principle that diaphoretics are often attended with the best effects in fevers; ~~of the~~ & that emetics will sometimes be of singular service in a hemorrhage of the uterus by exciting a nausea & giving an determination of the blood to the skin. Blisters also are not only useful, but highly necessary on various accounts. — 5. Astringents are also useful in fluxes, not only by the adstriction they occasion in the parts; but by bracing on that degree of inflammation wh. is necessary to the formation of good pus. It is on this principle that the peruvian bark is employed in the small pox & wounds to promote a good suppuration; and before the discovery of the bark, adstringents were universally employed for the same purpose & often called Vulnerarias; from their supposed specific action in cases of this kind. — 6. Adstringents are also useful in particular kinds of Inflammation. — I explained to you how an Inflammation may be produced by a weakened action of the heart & arteries; as well as by an increased one — In the former case the humors & blood stagnate in the smaller Vessels, from the inability of the solids to propel them with sufficient energy. — In the latter ~~th~~ by the increased impetus the blood is forced into Vessels not adapted to let it pass which it stagnates & occasions an inflammation. The former species occurs in the old & debilitated; the latter in the young & vigorous: the former terminates often ill in gangrene; the latter in suppuration: the former requires adstringents & such remedies as will increase the action of the Vessels; the latter demands the antiphlogistic method & regimen; by which the action of the heart & arteries is lessened & the impetus of the blood diminished. This ~~accounts~~ furnishes us with the reason why a peripneumony is commonly

a fatal
from w
kinds
of that
diff. on
reality
t, bea
their fa
therefore
tit in
the effor
prayed,
stream
Jefferson
guard
that pe
pay bas
allegiance
the leg
who de
rationa
I not co
delivered
requir
climate
of cur
be liab
general
peculiar
no mu
circum

e fatal disease in old people; & requires a different method of treatment
from what is proper in young persons — Instances of these diff.
kinds of inflammation in a slight degree we have in the Inflammation
of the Eye that takes place in old & young persons, & that require very
diff. methods of treatment, tho not sufficiently attended to by the gene-
rality of physicians; for as the former require gentle astringents
to bracc the relaxed tone of the Vessels & thus enable them to propel
their fluids; a contrary method must be pursued in the latter; &
therefore what is proper in the one case is absolutely detrimental
in the other. — An inattention to these particulars often render
the effort of the physician ineffectual; & when he hath to no purpose
purged, bled, blistered & cupped the patient, some old Women Nurses
or other at last performs the cure. I have been witness of
Instances of this kind, & therefore would am more particular in
warning you against the like Errors; for it happens almost daily
that physicians are consulted for these disorders, to which they
pay but a superficial attention, and in general have some favorite
all contrived Lotion which is made use of on every occasion without
the least judgment or propriety. A Physician therefore, or a person
who devotes himself to this Study should chiefly endeavour to acquire
a rational & proper principle of the causes on which diseases depend;
& not content himself with the narrow & confined Notions that are
delivered in the common books of practice. For the same disease
requires a different treatment according to the age, sex, temperament
Climate & stage of the disorder; & therefore any one single method
of cure that is laid down for a particular disorder, must ever
be liable to exceptions; which is not the case when we proceed on
general Indications and apply them to particular purposes adapted to
peculiar symptoms: for these will always require the same remedy,
no matter what we call the disease, or what are the ~~particular~~
circumstances attending it —

Stimu

Fibre, y

contract

effect on

Stimuli,

Sense, w

in conse

fully int

muli we

ed out y.

tants are

the y. fib

or irritab

the y. ch

y. body a

we cann

effects fr

of Stimu

under y. k

y. fy and

Stimulu

conc fibre

takes act

confined

effect on

Stimulants are such substances as excite y. actions of y. moving fibre, & have no effect on inanimate bodies. Whatever excites motion or contraction in an animal body is a Stimulus, & Med.s w.h have this effect are called Stimulants. They are either direct or indirect Stimuli; by y. latter term we mean such as act on y. organs of sense, whence a perception is excited in y. sensor. common or brain; in consequence of w.h y. nervous power is determined more power, fully into y. whole or a particular part of y. System. By direct Stimuli we mean such as act immediately on y. moving fibre & out y. intervention of y. brain or sensorium commune. Stimulants are of two kinds viz: y. mechanical & chemical Stimuli: y. first y. operation depends on y. figure e.g. a sharp knife cuts irritates our fibres; in this case y. effect depends on y. edge of y. knife. y. chemical Stimuli y. operation is owing to a peculiar property of y. body and is beyond our knowledge e.g. Heat is a powerful Stimulus; tho we cannot assign any reason for its being so, much less explain y. effects from any peculiar quality or figure of particles. Most of y. Stimulants employed in Medicine are therefore necessarily ranked under y. head of chemical Stimuli; as their operation seldom depends on y. figure & peculiar construction of y. substance. The operation of y. Stimulants is also of two kinds 1. such as act in common on every fibre e.g. a knife will cut any fibre: saline Stimulants will also act indiscriminately on every part of y. body 2. Are those w.h are confined to a particular part of y. system only; e.g. The rays of light effect only y. eyes; Sound y. Ear, Odour the Nose &c. &c

The action of Stimulants then appears to be almost confined to the Nervous System; it will therefore not be amiss to prem somewhat on the Nature of the Nerves; this I am more disp to, from the different view which Dr. Monro hath given on this Subject, whose particular attention for almost 30 yea to the Brain & Nerves, hath led him to discoveries that ha escaped the most accurate Anatomists & Physiologists that went before him ~~He observes~~ I am not however to follow him i his anatomical investigation ~~of~~ the subject, this you will no d learn ~~to~~ in its proper place; but I mean to confine myse ~~to~~ that part which will more particularly influence y. applica of Stimulants. ~~He observes that~~ Dr. Monro has observed y. the human species is furnishe beyond comparison with more brain, in proportion to y. size of our body, than any other animal; tho this does not hold good in what relates to the Nerves; for that Animals generally have the size of the Nerves proportioned to the size of their bodies — from this he draws in my opinion a very just infe rence, that the Brain in y. human species is not to be considered merely as the origin of the Nerves; but that it i likewise the seat of the mind or ~~rational~~ of our rational faculties. He goes still farther & brings some facts from m strous birth & a diseased state of the brain that go certainly go a great way to prove that y. animal functions at lea may be performed where there was little or no brain origine or where this had been almost totally obliterated by disease. ob

Stimulants are indicated in all cases when ye motions of the System are languid, inert, weak & slow. — They are therefore proper where the Motion of ye blood is suddenly interrupted as in faintings &c. likewise when ye is a sluggishness & stagnation of humours as in Chlorosis, Cachexy, phlegmatic habits &c. Further in Gangrenes wh. are ye consequence or attend oedematous, hydropic & cachectic states of the body. I formerly explained ye different causes of Gangrenes wh. are in general referred either to an increased or diminished action of the heart & arteries: it is in the latter that Stimulants are both useful & necessary. They are likewise employed for ye cure of internal fevers, and given before ye accession of ye fit wh. they frequently prevent from coming on. — They are also frequently used for the cure of various nervous disorders. In palsies they are generally ye medicines in wh. we put ye greatest confidence. The causes of Palsies are undoubtedly various & frequently elude our most accurate enquiries; no doubt this disorder often requires a very different & even opposite method of treatment; nay Stimulants may in particular cases of palsies be extremely improper & hurtful; but they are also frequently found to be very useful, and whenever we can trace the cause of a palsy to be owing to a weakened influx or inertia of the nervous power, we may be assured of the propriety of ordering Stimulants. — They are also recommended in Vertigos, Lethargys & Apoplexys. In Apoplexy generally distinguished into the sanguineous & serous; and G. use of Stimulants hath been altogether confined to ye latter species.

therefore thinks that the Nervous energy is not altogether derived from the brain, but that it may be & is generated in a degree at least over the whole body. For this purpose he hath discovered that ye pia mater sends its peculiar vessels surrounds every nerve, even to ye smallest ramifications, and ~~that~~ it is highly probable, that ~~ye same~~ it serves the same uses to the Nerves as the periosteum does to the bones. What farther serves to confirm this opinion is, that Animals who have no doubt feelings sufficiently acute, are not furnished with a brain properly so called, but the cavity of the head is furnished with an appearance that seems rather to be the origin of a Nerve than a sensorium commune. He hath likewise discovered, what is important as well as new, that the different nerves anastomose & form combinations which each other, or in other words, that fibres from one nerve will intermix & combine with ye fibres of another, and by this means connections are formed between the different nerves, & different parts of ye body by means of the Nerves, independant of the brain or Sensorium commune. From this it happens that if a Nerve is injured or destroyed that runs to a particular muscular part the whole muscle does not become useless, as the anastomosing nerve will in some measure supply the deficiency, in a manner similar to what is observed to happen in blood vessels. He likewise endeavours to account for the Ganglia of Nerves that occur so frequently, & which have hitherto puzzled Physiologists exceedingly — He hath observed that the different nerves which form a ganglion, communicate with each other, & mutually give & receive fibres from one another. The

I think we may on this principle account for a variety of occurrences in y. System, in a much more satisfactory manner than what hath been hitherto done. — We know for instance that friction or the exercise of a particular Limb, will not only give superior strength & firmness to the Member, but wch ex, cause the bulk of it. — This hath been generally supposed to be owing to the greater afflux of the Nervous power & blood into the parts but ~~I think~~ it is more probable that the effect is in a great measure partial & produced by the generating of a superior degree of Nervous energy in the part. — This is not however to be attributed altogether to the Nervous power; for I am inclined to believe Dr. Monro's experiments & reasonings tend to shew, that there is a more considerable connection & indeed dependance between the nervous & vascular System than what hath yet at least been attended to. — A fact mentioned in a late system of Surgery likewise tends to prove & illustrate this principle. — It was observed that after the operation for y. Aneurism in the Arm, by which the principal Artery was destroyed, tho the Nerve was carefully avoided, the Member below the Ligature became torpid, cold & ~~insensible~~ y. sensation in it was considerably impaired, but it returned by degrees, in a great measure to its pristine state & vigour,

as the anastomosing branches of the Artery became dilated & of sufficient capacity to convey ye proper quantity of blood. This appears to me to be a strong argument in favour of Dr. Monro's principle; for by the cessation of the circulation the Nerves ~~were~~ as well as the bloodvessels must have been deprived of their due nourishment, & therefore the generation of the Nervous energy suspended, untill the circulation was at some degree at least restored. ~~Also~~ in this case it is particularly evident that the Brain or Anterior commune was not in the least concerned, as the communication between that & ye member was not in any degree interrupted, for no nerve had been destroyed. — Some late experiments indeed shew that the ~~limb or member~~ heat in ye limb or member below ye ligature is encreased where the operation has been performed for ye Aneurism as the experiment was made with a thermometer there can be no doubt of its accuracy, and it no doubt gives rise to various speculations; it does not however appear that sensation was encreased & therefore does not affect our doctrine.

Some Authors have constituted a third species of Apoplexy y. cause of which they place in an Inertia of y. nervous fluid or power in y. brain: If it is once demonstrated that such kinds of Apoplexy actually take place, no doubt Stimulants are y. proper remedies; but I imagine y. day it will be attended w. great uncertainty, as it will be almost impossible to distinguish this kind from y. other species of Apoplexy; nay I am very doubtful whether the distinction does not arise merely from sentiment & not from practical observation. The use of Stimulants in y. serous apoplexy hath been advised by most physicians; they may be serviceable when applied externally at a distance from y. head, to cause a derivation of y. humours from y. brain: w. this intention they may even be useful in y. sanguineous apoplexy; but as for their internal use, or application to the Nose & head I am very uncertain whether their effects will be salutary; and I imagine that Evacuations by stool would be of much more consequence. Stimulants are serviceable in particular kinds of headache, when they are attended w. paleness & deep languor of y. body; in other words when we are well assured y. headach being a nervous affection; for whenever it is of a sharp acute nature or attended w. fever & inflamatory symptoms, they are highly improper. When y. pain is seated in y. external parts or w. out y. Cranium Blisters, Ether &c. will frequently remove it; but if the cause of y. disorder is fixed w. in y. cranium our efforts to relieve it will generally be fruitless.

observation is likewise entirely new & indeed directly opposite to the common received opinion. He therefore concludes that the ganglion does not only serve to form various combinations between different nerves; but that it is particularly adapted to generate the Nervous energy. And finally he hath discovered that y. nerves in their ultimate ramifications, or rather terminations are of a serpentine form, resembling the lines in ye palm of the hand by which they are particularly adapted to y. extensions & contractions of the Muscles. — From these Observations we may conclude that various disorders, e.g. Paralytic affections may be entirely partial or local, & not have their origin in the Sensorium commune; & that therefore local applications may prove highly useful, when remedies that would have a general effect on the System would be ineffectual in removing the Complaint. — That from y. various combinations & anastomoses that take place between the Nerves, without the intervention of the Sensorium commune, various sympathic affections may likewise take place, without the brain having any share in them; and is it not also probable that by a more particular attention to these anastomoses, we may not only account for ~~the different~~ some sympathies but least that take place, but also be led to make applications in such a manner as will prove more effectual: and finally I think highly probable that these discoveries will at first check & finally banish the metaphysical reasonings that have of late become fashionable & to very little purpose —

Stimulants are moreover indicated in flatulency, acrimony & spasmodic affection of the Stomach & alimentary canal. For as these symptoms are commonly owing to a debility of the organs of digestion & a diminished peristaltic motion, by w^h. costiveness is also produced, Stimulants by exciting y^e. action of the Stomach & Intestines, promote digestion and y^e. excretion of y^e. fæces; they are therefore frequently necessary in y^e. hypochondriac & hysteric diseases, w^h. are universally accompanied w^h. symptoms of flatulencies: in these cases they act indeed upon y^e. principle of antispasmodics; as such we shall have an opportunity to hear of them more fully hereafter. ~~& likewise~~ They have likewise been recommended for the cure of the Gout & various compositions have been formed for this purpose; we shall under the article of Bitters endeavour to ascertain their ~~usefulness~~ in this disorder & y^e. advantages & disadvantages attending their exhibition —— Stimulants are hurtful whenever the action of the heart & arteries is too vigorous: they are therefore improper in hæmorrhages, inflammations & all kind of fevers owing to this cause; & may owing to this cause; for in my lecture on astringents I explained to you how hæmorrhages, Inflammations & fevers were sometimes occasioned by debility & a weakened action of the solids, y^e. required ye judicious administration of stimulating remedies. —— It is upon this principle that y^e. peruvian bark & other stimulants are prescribed during y^e. intermission of fevers, to prevent their return; tho they would be very improper given ~~while~~ ye during y^e. paroxysm ——

Off
the cont
& irrita
The same
Stimul
liberally
Stimul
We are n
Stimula
of the
them to
must c.
Relisp
most co
are very
very ac
it wonde
Physicia
mitted
Lavand
in the
it is in
c. or
Tumbler
Redrup

The constant or long continued use of stimulants enervates the system, destroys the mobility & irritability of the moving fibres and lis y. end destroy their tone. The same effects are produced by a too frequent use of y. officinal stimuli that we find to be y. consequence of using Wine too liberally; and we should therefore be as cautious how we order stimulants, as we should in indulging y. free use of spirituous liquors.

We are next to speak of y. particular substances employed in Medicine as stimulants: these are indeed very numerous; but I shall only treat of those y. deserve to be employed by us and whose virtues recommend them to our notice & practice. In Dr. Cullen's Materia Medica you will find in. a great variety, of w. no mention is made here —

Melissa, Balm: I should not have mentioned this but that it is y. substance most commonly used here as a Tea or drink for y. sick. Its virtues are very inconsiderable, & happily for y. patients. For as it is used on every occasion & in all kinds of fevers, if it were a considerable stimulant it would often be attended w. disadvantage. It ought however by a Physician who pays any attention to rational indications be only permitted in those kinds of fevers & disorders y. are attended w. languor & debility.

Lavandula, Lavender. An infusion of this may be used w. advantage in those disorders y. are called or said to be owing to a pituita frigida; by. is in diseases attended w. Languor, debility & disorders headachs attended w. or owing to that cause. It hath therefore been recommended in trembling of y. extremities, paralytic affections, dimness of sight & hardness of hearing —

Mayorance

it may
ted a pow
y. fitue
guilty
gentle an
ment o
cure of
Hypop

considera
of y. Mine
contribution
canal.
it is alw
attended
Mentha
y. but
the then
other ce
always
of y. bow
bylier co
Stomach
in y. sa
when sp

Majorana. Marjoram. As this hath a peculiar aromatic & grateful odour, it may be used in cases of languor & debility, & hath always been accounted a powerful cephalic. An infusion of it may also be drank in hysterical asthma & catarrhs & out fever. For by its stimulating quality it promotes expectoration and at ye same time acts as a little antispasmodic. It is ye strongest of this class except ye Marum Syriacum or Syrian Marjoram, & hath been highly recomended for the cure of these disorders. —

Hyssop & Pennyroyal are much in virtue; the latter however is the most considerable. It expels flatulencies and promotes ye ~~evacuation~~ discharge of ye Menses, whenever these are checked or suppressed from spasmodic constrictions in ye Vessels of ye Uterus, or from spasms in ye alimentary canal. On account of its antispasmodic virtues & stimulating quality it is also recomended in diseases of ye breast when they are not attended w. fever —

Mentha, Mint. There are various species of Mint; the peppermint is however ye but adapted for ye purposes of medicine, as its action is more considerable than any of ye others & is more extended over the system than most other remedies. Mint Water & ye other preparations of Mint have been always comended in Vomitings, hiccups, colick & other disorders of ye bowels ye one their origin to flatulencies or distension of ye Abdomen by Air confined in ye Intestines. Hence it hath always been reckoned stomachic & carminative, and may also be employed w. advantage in ye same manner as Pennyroyal for promoting ye menstrual flux when spasms in ye uterus or alimentary canal interrupt ye evacuation

Saloin

entertaining

own

are ad

a good

Jesus o

it alon

Van Dor

Sight Sw

exclamatio

of Flue

cent ar

Women

but as

ways a

of inflam

and del

The rup

compreh

Fennel Se

Cummin

the follow

Burnett

Vitriol

the Inter

Headach

from

Salvia. Sage. This plant was held in great Veneration by y. Antients; they entertained ~~had the~~ opinion that it would insure long life. We now however are not so sanguine in its praises; tho in many cases it may prove a good remedy. Besides its fragrant & stimulating quality it also possesses some adstringent Virtue, for it strikes an Ink w. green Vitriol; it also affords a convention of y. same nature as Camphor

Van Swieten recommends an Infusion of it in Spirit or Water for Night Sweats y. either attend or follow disorders and are owing to debility & relaxation. It hath also been commended in palsies, ~~tremblings~~ & y. fluor albus; y. continued use of it hath also been known to prove ent abortions, after they had in a manner become habitual. The Women here make use of it on every occasion & in every distemper; but as it is a much stronger remedy than Balm, we should always avoid its use in those disorders y. are attended w. symptoms of inflammation & only permit it in fevers accompanied w. langor and debility

The next head of Stimulants are y. umbelliferous plants under w. ~~they~~ we comprehend the Sem. Anisi, Anis seed; Carvi, Carraway seed; Foeniculi Fennel Seed; Daucii, wild Carrot seed; Daucii cretici, Candy Carrot; Cymini, Cummin seed; the principal Virtues of these reside in the Seed; but the following have their chief Virtue in the root. viz: Angelica; Lovage; Burnet Saxifrage; & Italian Masterwort. They all agree in one common Virtue which is y. they are carminative or dispell Air confined in the Intestines; by w. they prove antispasmodic; assist digestion, relieve headachs arising from crudities, dispel flatulencies & cure Cholics arising from ~~the~~ flatulencies ——

The Angel
in contr
diaphor
vices m
gion Mi
produce
deserve
stances
than of
Devil & the
this blef
troubled
custom
in the
Demon
diffombre
tion in
of ediffi
either with
double
of it ofen
forced
sicned by
their deron
by-ew
it is the
must be

The Angelica hath been particularly recommended as an alexipharmac in contagious diseases; but much doubtful whether it deserves a preference to any other diaphoretic. The antient physicians had a high opinion of alexipharmaac medicines, & supposed that they would expel poyson and contagious Miasmata only from y. blood, before the any Inconvenience could be produced by them; but reason informs us that no Medicine can deserve y. title of an alexipharmac, and we farther find y. y. substances recommended for y. purpose have in general no Virtues but those of being moderately stimulating —

Anis & Fennel seed are y. most agreable & at y. same time efficacious of this kind. In Infusion or Tea of these Seeds affords great relief to Children troubled w. flatulencies & gripings, and is much safer than y. pernicious custom w. Nurses frequently adopt of giving Children Spirituous drinks in these disorders. —

Daucus sylvestris or wild Carrot. This was formerly reckoned amongst Lithontriptics; and it is again lately recommended in calculous concretions in y. Kidneys & bladder. It certainly cannot deserve the Name of a Lithontriptic, as it evidently hath not y. power of dissolving y. stone either within or out of y. body. Its diuretic Virtues are even very inconsiderable & appear only by chance. Still however those who have made use of it affect that it gives considerable relief in the Gravel. It must then act as an antispasmodic & by that means mitigate y. pains occasioned by y. calculous concretions. The symptoms indeed accompanying this disorder are frequently of a spasmodic kind, & may be alleviated by y. use of Opium or any other Medicine acting as an antispasmodic; it is therefore more than probable that y. good effects of y. Wild carrot in this disease must be accounted for on y. same principle.

The next
Stadich,
All of th
food, the
safety be
nothing
tation
fluids
warmed
these plea
both by
visible o
Mustard
for this
a day; or
in this
lents in
in the s
Inflamma
it produ
heth are
from
the stomac
its effect
is only

The next class of Stimulants are the Siliquous, comprehending Mustard, Radish, horseradish, ye different kinds of Nasturtium & Scurvygrass. — All of these have ever been famous for ye cure, as well preservation from, the Scurvy. They are perhaps the only stimulants ye can be safely be employed in this disease; in wh, as I formerly told you, nothing can be useful but what is subject to undergo a ferment-ation in the Stomach & be converted into Chyle; by wh the fluids are supplied wh fresh nourishment & ye degenerated parts evacuated. For this purpose, besides ye accident Vegetables & fruits, these plants are extremely proper; for the exercise the evacuations of ye by sweat & urine & at ye same time correct ye bad dispo-sition of our fluids.

Mustard Seed hath been much commended for ye cure of paralytic affections; for this purpose we order it from two to four table spoonsful a day; or in such quantities as to keep ye body gently open: Given in this manner it proves one of the safest & most efficacious stimu-lants in this disorder; and is never attended wh any heat or burning in the stomach; nor is there ye least danger of its producing an inflammation of the bowels. The stomach extracts ye Virtues of it gradually & slowly; by wh means the heating effects wh it otherwise hath are prevented. The powder of Mustard or an Infusion of it from ℥ss to ℥ij gives us an excellent emetic; ye only stimulates the stomach & causes ye evacuation of its contents, without extending its effects over the rest of the system. Whenever therefore our intention is only to evacuate the stomach; or when this is loaded wh Phlegm &

Sheuas
operation
this
we plea
general
the Com
remedy
& Rebel
of Men
& y. opi
By giv
were ent
then we
given in
they in
will pre
every oth
applied
and Ass
part affe
cases tha
Lieutenan
y. latter
very reas

Nausea &c. indicate vomiting, and we would not wish to have the
Operation continued; a dose of pulverized Mustard will produce
this effect; and the Vomiting may be carried to any degree
we please, by letting ye patient drink qu. Infusion. For in
general this dose produces but one Evacuation; unless we encourage
the Vomiting by other Means. — Mustard Whey is an excellent
remedy in Lethargy &c, ye. stupor Apoplexy and in all Surgeon
Debility. It is sometimes of ye. greatest use in ye. last stage
of a Nervous fever; when there is almost a total loss of Sensibility
& ye. organs requires strong Stimulants to excite them to action,
by giving Mustard Whey &c. Wine in this case; some of the Mustard
will enter ye. circulation, & thus prove a more universal Stimulant
than even the strongest Medicines of this class, whose action, unless
given in such a form, is principally confined to the stomach. The
Whey also Stimulates ye. organs of Urine & perspiration, and
will frequently bring on a diaphoresis, &c. solves the spasms when
every other method fails of this effect. — Externally it is often
applied in Sinapisms to excite the languid motion of ye. least
Arteries, and at ye. same time cause a derivation from ye.
part affected. They will even have more considerable effects in some
cases than blisters. There is no doubt but what ye. pain from
Sinapisms is greater than ye. excited by blisters; tho ye. Idea of
ye. latter is so terrible to many people, ye. they will submit &c.
very readily to ye. former, when they cannot be prevailed upon

apply y. latter. It is not however in every case safe to substitute sina
pisms for blisters; but particularly in inflamatory fevers; where
y. chief use of blisters is owing to their extraordinarie Virtues; and
y. stimulating quality of sinapisms would be hurtful —
Horseradish is attended w. similar effects in most cases as y. Mustard seed;
an Infusion of it & Mustard in Beer have been employed successfully
as a constant drink in hydropic cases; particularly in those y. are
y. consequence of languor & debility after an intermittent or other
fevers. Likewise from Obstructions in the Viscera. It acts as a
diuretic & stimulant, and is therefore a very proper drink in
this disease; where the patient is tormented w. a continual thirst,
and ought to make use of such drinks only as will pass off again
easily by Urine, and not add to y. accumulated humours in y.
body. A Syrup of horseradish is recommended for coughs & hoarseness;
but particularly in y. humoural Asthma; eating horseradish
w. sugar is also recommended for y. same purpose. And all y. pulty
tinctures of this head have been pressed for giving removing hoarse
ness and giving a clear Voice. —
Analogous in Virtues to y. substances we have been just treating of are
Garlick, Onions & Leeks — The Garlick is also used externally on Poultices, for
y. same intentions as Mustard & horseradish; but is to y. generality
of patients much more offensive. It is particularly recommended against
worms when applied to y. Navel & even Soles of y. feet. It is
evident that y. odour pervades every part of y. body; but I much

doubt
method
of the Jan
afore
Catarrhus
advance
of y. ne
y. insta
have the
ap. If
cendo
endeavo
perhaps
are atten
of respiro
Catch
it may
effects.
at any
in the di
or roaster
in metaph
for I ca
simple
they y

doubt whether externally applied it will expel Worms, unless other methods are used at ye same time. It is diuretic & diaphoretic; the same from its sensible qualities to bear a great analogy to Asafetida. It is as well as ye Asafetida recommended in the Asthma senile. This is a disorder wd. wch. many persons of an advanced age are afflicted. It seems to be owing to a diminution of ye natural functions, by wch. ye matters evacuated otherwise by ye insensible perspiration are thrown upon ye breast & lungs, where the occasion violent Coughing, by which the Mucus is thrown up. It is a perfect cure is never to be expected, and all we can do is to palliate the disorder. The best method therefore is to endeavour to increase ye insensible perspiration; no Medicine are perhaps equal to Asafetida or Garlick for ye purpose; but then they are attended wd. this manifest inconvenience of rending ye breath & perspiration very offensive. This is however unavoidable. The Garlick should be taken Morning & evening & swallowed whole ye. It may remain longer in ye system & produce more considerable effects. Garlick hath also been commended for ye cure of ye calculus: but without any reason: I should imagine ye stimulating diuretics would rather be hurtful in that disease, by increasing ye disposition to inflammation. Boiled or roasted Onions have been supposed to have some peculiar Virtues in maturating boils & abscesses; this however appears to be imaginary; for I cannot see how they can have any advantage over the more simple & agreable Mucilages; for by boiling their acrimony is dissipated & they yield a very simple & good Mucilage

Consider
also similar
more effic
Tis or fever
sometimes
of fever
short or
Infusion
of degenera
Delirium &
and also
the matter
lately occ
its origin
of death
and for
to any
Medicine
cured of
a cordial
purpose
its use
ed. of the
prepared in
Gruel be
and mu
to boiling
the dis

Coniferæ, comprehending the Fir, y. Pine & y. Juniper. All of them pos-
sess similar Virtues, owing to the turpentine they contain, & therefore
more efficacious in proportion to y. quantity of this turpentine
Fir or pine tops have been lately introduced into Medicine & are
sometimes employed in the Diet drinks y. are used for y. purpose
of purifying or cleansing y. blood. We should for y. purpose take y.
shoots of one year, when they are about half a fingers length. An
infusion of them will prove diuretic & diaphoretic & thus carry off
y. degenerating parts of y. blood; by which it proves useful in the
leprosy & eruptions & foulnesses of the Skin. Eruptions on the Skin
are also very frequently owing to an obstructed perspiration; by wh.
the matter to be carried off by perspiration, stagnate, collect & accumu-
late, occasioning blotches, pimples & ulcers, tho the blood preserves
its original purity. In this case it is evident that a continued course
of gentle diaphoretics are the only rational Indication of cure;
and for this purpose an Infusion of Fir tops is perhaps equal
to any of the most composed diet drinks. It was by this
Medicine that the late Lord Chancellor Northington was entirely
cured of these eruptions after he had been troubled wh. them for
a considerable time & made use of various remedies to no
purpose: This cure soon gave the remedy a great character & extended
its use over every part of England. It is of very little consequence
wh. of the Firs or pines we employ for this purpose, as they all cor-
respond in Virtues: Formerly & even at present Physicians generally
prescribe in these disorders infusions of Guaiacum, Sassafras &c. wh.
are much weaker and at the same time scarce give but their Virtues
to boiling Water: Salivation is generally of little consequence effect; for as
the disease is seated in y. Skin, it is only medicines whose effect is chiefly con-

fined to
the wood
with the
their dis
or the o
spasmod
occasion
ever the
pearance
mended
fever. Th
of Juni
a scrub
to the
for giving
virtues;
compound
cition
medicine
in the
but in
most con
cotation,
have in
imitate
has been
will pro
of reco

lined to the superficies; that will have any tendency to remove it
The Wood & berries of Juniper agree in sensible qualities & medical Virtues
with the former; and hitherto have been much used in Medecine, for
their diuretic & carminative effects. An Infusion of Juniper berries
or the oil of Juniper is frequently attended w.th sudden relief in
spasmodic complaints of the stomach & bowels, or Cholics, that are
occasioned by flatulencies. On account of their heating quality how-
ever they should never be employed when there is the least ap-
pearance of inflammatory symptoms. They have also been recom-
mended in y.e pituitous asthma & other disorders of y.e breast w.th out
fever. Van Helmont used a composition of Juniper berries & y.e Root
of Juniper w.th much success in the dropsy, & kept y.e preparation
secret for a considerable time. We seldom now however trust the cure
of this remedy; the root of Juniper however affords an excellent Vehicle
for giving diuretic Medecines in pills or boluses; as it corresponds in
virtues; which should always be an object w.th y.e physician when he
compounds Medecines; & he should never enter any thing into y.e compo-
sition but what corresponds w.th the intention for w.ch he prescribes the
medecine. An Infusion of Juniper berries hath also been highly recomended
in the Nephritic & calculous complaints in the Kidneys & bladder;
but I imagine on very erroneous principles; for as this disorder is al-
most constantly attended w.th inflammatory symptoms, & always w.th ir-
ritation, any stimulating remedy must aggravate y.e symptoms.
I have indeed frequently known spasmodic symptoms in the bowels
imitate a fit of y.e nephritis so much y.t y.e patient & physician
have been equally deceived by it; where an Infusion of Juniper
will give instantaneous relief & this hath probably been y.e occasion
of recomending this remedy in nephritic complaints ——

Balsam

odour, an
kind of
and only
liniment
the natio
lejected w
various
have bee
into un

Bals: Co

j. unpa
from the
to a su
theory; fo
we know
It is wid
Urine &
with the
aggravate
are rend
ration we
account
that the
Gentlemen
would fro
of the a

Balsama, Balsams, so called by ye Antients on account of their agreeable odour, and from a supposition of their preserving as well as curing all kind of putrefaction whether applied externally or given internally. They are oily resinous bodies, odoriferous and of ye consistence of ointment or liniment; i.e. between ye form of oil & resin. They may be divided into the natural & artificial; & ye former again into the liquid & dry: of the liquid we have the Balsam Copaiva, peruvianum, Tolet, canadense, various Turpentines &c. — They all correspond much in Virtues, & have been recommended for a Variety of disorders; wch. we shall enquire into under each Article.

Bals: Copaiva. This hath been particularly recommended in Gleets of ye urinary passages, whether the consequence of venereal infection or arising from other causes: ~~then~~ Its effects in these cases have generally been ascribed to a supposed astringent Virtue; but experience will not warrant this theory; for it is not found to possess any such quality; & on the contrary we know ye if given in proper doses, it proves an excellent laxative. It is evidently a stimulant and hath a particular tendency to affect ye Urine & urinary passages; for we find that it impregnates ye urine with the odour of Violets & a bitter taste. We also observe that it always aggravates a Gonorrhoea, if it be taken before the inflammatory Symptoms are removed, & increases the heat & ardor Urinæ. From these considerations we are led to explain its effects on different principles, and to account for its operation from its stimulating quality. We find that other acrid stimuli will be attended with ye same effects; and Cantharides ~~will~~ are ~~often~~ frequently prescribed for ye same purpose, and would probably ~~more frequently~~ oftener succeed, but for ye uncertainty of the dose & operation. For tho some persons are even priscously

affected by
produce
inflamma
also so
attended
vation
matter
removed
is brought
various
used in
the effect
to a dob
such ge
them to
to contract
The Bal
of over
may fa
But of
an over
with co
albus, c
as if
tail
we h

affected by a small dose, yet in others a considerable quantity will sometimes produce little or no effects. But whenever they produce a slight degree of inflamation they generally cure the disorder. Stimulating Injections are also sometimes thrown into the Urethra for the same purpose & attended w.th good effects. In this intention we employ various preparation of mercury, which sometimes occasion such a degree of inflamation as proves expeditiously troublesome, tho the Gleet is commonly removed by it. Riding also long journeys, by w.ch an Inflamation is brought on in the parts, will frequently cure the disorder, when various remedies have been used to no purpose. Bougies are also used in the same intention. All these different methods produce their effect entirely on y.e same principle. For as the disorder is owing to a debility & relaxation of the orifices of y.e Glands in the Urethra, such remedies as are immediately applied to them & stimulate them to contraction, or even excite such a degree of inflamation as shall contract the mouths of the Glands, will commonly cure the Gleet. The Balsam Copaiva acts in a similar manner, and hath the advantage of over most other Stimulants from its peculiar tendency to the urinary passages & thus being immediately applied to the part affected. But if it be given in a Gonorrhoea before the inflammatory symptoms are overcome, & y.e venereal infection eliminated, it is evidently attended with considerable disadvantages. It is also recommended in the fluor albus, w.ch is a disorder peculiar to Women & bears some analogy to a gleet. But as it is frequently brought on by a total relaxation of the system, partial Stimuli cannot be much depended upon. Long continued use however of y.e Balsam Copaiva hath frequently been known to cure

the disease
commence
in contact
decision
accompany
the general
immediate
a solution
or asthma
regre
expect
such lect
Sydenham

the disorder: the irritation wch. it occasions in ye. urinary passages is probably communicated to ye. Uterus, ye. seat of the disorder, which is contiguous & in contact wth. ye. bladder & urethra. It may therefore wth. great propriety be given even when the disorder is owing to general relaxation & accompany by combining it with such remedies as will tend to restore the general tone of ye. System, whilst the balsam Copaiva acts more immediately on ye. part that particularly affected — Combined wth. a solution of Salt of Tartar it is recommended in the pituita frigida or authors Lucus pituitosum; also in glandular obstructions. I need hardly repeat it to you how circumspect a physician must be to prescribe such heating stimulants when there is ye least symptom of fever.

Balsamus Peruvianus. In external applications it is made use of when a nerve, tendon or ye. periosteum hath been injured. Internally it is recommended for ye. cure of ye. dry belly ach, given repeatedly from 20 to 60 drops for a dose. Sydenham as well Hillary, who practised long time in the Windwardies gave it a great character for ye. cure of this disorder, and also to remove the palsy ye. is frequently ye. consequence of ye. Colica pictonum. It hath also been recommended for ye. cure of ye. Consumption & Ulcers in the Lungs. Other Balsams have likewise been recommended for ye. same purpose; but I very much doubt whether their effects have a salutary tendency; for as Ulcers in the Lungs & Consumptions in general are accompanied wth. Symptoms of Inflammation, ye. frequently even require bleeding and other Evacuations, every Medicine that increases ye. action of ye heart & arteries must aggravate the symptoms. The ~~balsam~~ peruvian balsam, but particularly the artificial balsams, ye. are recommended in this disorder, are of a stimulating nature & for this reason should always be avoided in every complaint of ye. breast accompanied wth. ~~inflammatory~~ Symptoms;

they are
expectorat
erally
formidab
encourag
for if
Groaches
It is by
to be
the habit
Ostrich
Costiveness
Aperidies;
to which
the Intes
of Glyster
with gom
give spec
the Gum
treating
exhibited
rheumatic
or the
Diseas.
medicine
Order.
Symp

they are not however improper in ye pituitous asthma, where they promote expectoration; not from any pectoral Virtue, which Physicians have universally ascribed to them; for this is entirely imaginary; but from ye stimulating quality by which they prove diuretic, diaphoretic & likewise encourage expectoration. The Balsam of Tolu is used & recommended for ye same purposes & intentions as ye balsam of Peru. — Turpentine approaches very much in Virtues to ye balsams we have been treating of. It is by Pitcairne recommended for ye Sciatica, taken in large quantities, & to be persisted in for a considerable time. It is also serviceable in the habitual costiveness that are owing to flatulencies & spasms in ye Bowels. It is ~~also~~ likewise serviceable in Glysters in the obstinate costiveness, and answers much better than Salt or other stimulating medicies; for its action is more extended to parts distant from those to which it is applied and it is also a considerable antispasmodic. When the Intestines are ulcerated, or an Ulcer is formed in the Intestines (in each of Glysters, Turpentine dissolved in ye Yolk of an Egg, is sometimes applied with good success. — The fumigations of Turpentine will sometimes give speedy relief in ye hemorhoides &c. —

The Gum Guaiacum approaches much in Virtues to ye Balsams we have been just treating of, it hath this further recommendation that it may be more conveniently exhibited than any of them. It is particularly recommended in arthritic & rheumatic complaints; in the former it is useful by throwing the Gout on the extremities & thus preventing its fixing in some of the noble viscera. In the chronic rheumatism it hath ever been reckoned a specific medicine: Dr Pringle commends it particularly for the cure of this disorder. But then we must be cautious to give it, when there any Symptoms of fever. We should always reduce it into a very fine powder

By means
water,
strains
tues; and
an depo
for y. ex
Myrick
afford in
ular direct
use in y
tho it
lict ofes
When
system
same
not see
it for
we also
present
practice
been re
est how
fastin
aspersion
from a
Myrick
be pro

by means of ye yolk of an Egg or ye Mucilage of gum arabic dissolve it in
Water, about ℥ij in ℥vj, to this quantity we may add from two to
4 grains of Tartar emetic, & ye intention of encreasing its diaphoretic vir-
tues; and order a table spoonful or more every two hours. This affords us
an elegant medicine, equal in Virtues to most of ye remedies prescribed
for ye cure of this disorder, and seldom failing of giving some relief.

Myrrh. It hath been long disputed what substance Myrrh was & what Vegetable
affords it. It appears to be ye exudation of some vegetable & is collected by partic-
ular Insects, in ye same manner as Bees collect Wax, & is by them hoarded
up in ye hollow trunks of Trees in ye small grains in wch it is brought to us.
Tho it is a substance ye hath been introduced into Medicine in the earl-
iest ages, yet we are still at a loss to ~~know~~ ascertain its real Virtues & effects.
When it is given in large quantities it stimulates ye Stomach &
System in general, likewise affecting the urinary passages much in ye
same manner as ye balsams we have been just treating of; but does
not seem to possess any peculiar or capital Virtues. The Antients used
it for embalming their dead bodies, which it preserved from putrefaction;
we also use it in external applications in foul & putrid Ulcers & to
prevent or cure a Gangrene. Internally it cannot be of much service in
putrid diseases on account of its heating & stimulating quality. It hath
been reckoned emmenagogue & to promote ye discharge of ye Menses; it does
not however act particularly on the Uterus, but on ye general principles
of a stimulus, nor hath it any effect in these cases to entitle it to
a preference — Boerhave, who deduced the cause of many disorders
from a spontaneous gluten & inert fibre, hath particularly recommended
Myrrh in the diseases arising from this cause; untill however the cause
be properly established we may justly doubt the efficacy of ye medicine

Benzoin

Ay. Sulp

Benjamin

an aspe

the hyp

such di

an inte

least ord

two or

We are

ing an g

compos

Styrax

ned a b

only eff

approach

in the fo

It hous

patient

a suffici

by coven

tinued f

spent

a thin

Dich. O

generally

pass to

Benzoinum, Gum Benjamin. This hath been constantly reckoned a pectoral, & ye saline substance which we have under the name of Flowers of Benjamin hath even been supposed to possess very considerable Vertues as a pectoral. I imagine however that these effects are more ye hypothetical than real, for they have seldome been given in such doses as to expect any Vertues at all. If we prescribe them w.th an intention to receive any advantage from them we should at least order them from 15 to 20 grains for a dose, and not in doses of two or three grains, when no effect can be produced or expected.

We are next to treat of some Woods that are employed in Medecine, the following are generally used for ye same intention & commonly enter ye same composition.

Lignum guaicum. When this was first brought into Europe it was esteemed a certain & efficacious cure in the venereal disease. It is however only efficacious in so far as it is combined w.th a sweating & remaining possess, as will be more evident from than manner of using it, which is as follows: ℥xij of ye Wood was macerated in ℔ij of Water for 24 hours, & then boiled untill one half of ye Water was evaporated. The patient was confined to a warm room, and drank several times a day a sufficient quantity of this decoction properly warmed, in bed and covering himself up heated & encouraged a sweat. This method was to be continued for 24 days; during which he was recaptitated to live on a very spare & thin diet, ~~drinking nothing but~~ using for his constant drink this decoction of the guaicum & taking the strong Impregnation daily. By this method he was reduced extremely low, and the disease generally cured. The guaicum however seems to have contributed ye least part to ye cure, & warm Water would have answered the purpose equally

will the
neral di
Sassafras
the same
for as it
by boiling
q. chalk
in this
Sarsaparil
first mate
in the sa
pro. Sordy
practice
Kennedy
dit fabri
neral
proved id
ries th
ipal Vir
of this
it succe
viable in
prisoner
immediate
to be re
that
familia

well: the Italians are sensible of this & therefore at this day cure the venereal disease by warm Water & ye sweating regimen.

Sassafras hath been used much in ye same manner as Guaiacum & for the same disorders: When we order it, we should prescribe it in decoction, for as it contains a strong aromatic odour & essential oil, these are lost by boiling. The continued use of it hath been found serviceable in ye chachexy & fluor albus. Likewise in blotches & eruptions of the Skin; in this case it act as a stimulant, encreasing ye insensible perspiration.

Sarsaparilla. This root was much employed when the Venereal disease was first noticed in Europe; it was generally combined w. the Guaiacum & used in the same manner. Like that however it began to be neglected when Mr. Fordyce a Surgeon of Eminence in London again introduced it into practice on the following occasion. It is not many years since Mr. Kennedy introduced a remedy into England w. goes under the name of ye Lisbon diet drink or Kennedy's decoction, ye is found very effectual in curing the venereal ~~Pox~~ disease in all its stages, even after repeated Salivations have proved ineffectual. As he kept ye preparation a secret, physicians were anxious to know its composition, which was by many thought to owe its principal Virtues to the Sarsaparilla. Mr. Fordyce therefore tried a decoction of this in many different cases of ye venereal disease & frequently found it successful in relieving & curing this disease. It was particularly serviceable in chronic venereal complaints; but never unless Mercury had been previously given. After a Salivation it often happens ye patient is greatly emaciated, hath still some ulcers & is tormented w. pains in ye bones, not to be removed even by frequent Salivations. It was in cases of this kind that Mr. Fordyce experienced the good effects of a decoction of Sarsaparilla, & found it give almost sudden relief from ye troublesome pains

It is hence
effects of
best author
& in every
its own
in this a
best tree
effects of
of Spirituous
by. Sieve
other Hor
& Stove
kept in
exportation
in y. fol
sieve & bori
quantity
in y. un
Summer's
be tredice
Kingdom
this confer
tides on
north & the
conformed
of ed. he

It is however evident that a decoction of y. Sarsaparilla will not produce effects equal or similar to the Lisbon diet drink. I know it from y. best authority that y. diet drink will cure all kinds of venereal complaints in every stage of y. disease, whether or not Mercury precedes or accompanies its use; even after Mercury & every other method generally employed in this disorder have failed of success. Several other substances have been tried & many preparations contrived to imitate the Virtues & effects of Kennedy's decoction. Amongst many the Cortex Mezereum Spurge Laurel hath been found to approach nearest in its effect y. Lisbon drink & has been repeatedly used in St. Thomas's & other Hospitals. It does not grow naturally in this Country; but is kept in some Gardens. It hath been very successful in removing y. venereal portions, w.h. we are often obliged to extirpate w.h. the knife. It is used y. following manner: Take of Mezereum & Liquorice, of each, ℥ij, slice & boil them in ℔ij of Water, untill ℔j is evaporated. The remaining quantity is to be taken w.in 24 hours, & y. patient is to continue y. use of it for 6 Weeks; in which time he may expect a perfect cure. Kennedy's decoction is an undoubted proof that the venereal disease may be radically & effectually cured by remedies taken from y. Vegetable Kingdom, which had untill this time been a doubt w.h. many persons. This confirms also y. unanimous report of Travellers among y. Indian Tribes on this Continent, that they cure the venereal Disease by Roots & herbs, y. produce of this Country: this hath again been lately confirmed to me by a Surgeon of y. Army, who related it as a fact w.h. himself was a Witness: We shall at a future occasion mention

the plant
Contrary
practice
Precisma
opinion
be supp
stantly
Finding
very Lord
any effect
of th. It
not be a
who are
opulent
it cann
Decision
how it
great offi
two of
effects, A
ble are
ble Qual
mean wi
many
we here
are in
in the

the plants, w.h. which it is said the Indians perform the cure

Contrayerva. This root hath been reckoned diaphoretic, alexipharmac & particularly recommended in contagious diseases accompanied w.h. a putrid Miasma; also in low nervous fevers when y.e powers of life require to be supported. With this Intention y.e most eminent Physicians constantly prescribe it in Disorders attended w.h. y.e utmost danger & difficulty, ordering it from 5 to 10 grains in a dose, & repeating this quantity every 2 or 3 hours; Pringle however confesses he never perceived any effects from it either good or bad, & therefore persevered in y.e use of it. It is my opinion that an ounce of it taken at a time would not be attended w.h. any effect; it therefore affords physicians who are fond of trifles, & do not care how much they trifle, an excellent medicine, and confirms the old adage: if it does no good, it cannot do any harm: & indeed it cannot do any other harm, than deceiving y.e patient, who whilst he trusts his life in y.e physician's hands, dies it perhaps by being trifled with. The Physician however expects great effects from his Medicine, & wonders how 5 grains of Contrayerva or of Ipecacuanha & perhaps even 10 of Nitre should fail of y.e intended effects, & his patient die notwithstanding y.e utmost efforts of y.e Doctor.

We are next to enter on y.e consideration of Stimulants agreeing in sensible Qualities. The first head of these are y.e Aromatics. By this term we mean such substances as have a pungent acrid taste, combined w.h. a fragrancy y.e makes them very agreeable to our Organs of taste & smell. They all have considerable quantity of essential oil, specifically heavier than Water, are in general y.e product of y.e torrid zone, and agree as much in their medicinal Virtues as they do in sensible qualities. —

Cinnamon
odour. This
ness of
very good
satisfaction
happen that
be overlooked
keep up
mon is
of autumn
to render
we should
separated
in in
will its
present
to an
gelise
with to
Redefine
signification
to the Flat
superior
with
of the
Alterus
superior

Cinnamon is y. most agreeable of all y. aromatics on account of its grateful
dour. It is y. but cordial stimulant y. can be taken in very great Weak-
ness & Languor, when a single drop of y. oil will often be attended w.
very good consequences. The Shrub w. affords Cinnamon grows only in
Section in Ceylon; from whence it is brought to Holland; if it at any time
appens that too great a quantity is imported, by w. y. Market is likely to
e overstocked, y. Dutch East India Company burns y. superfluous, in order to
keep up y. price of y. valuable article. The oil or an Infusion of Cinna-
mon is very useful in those Languors & Weaknesses w. are often y. consequence
f autumnal Intermittents. If we add Cinnamon to a decoction in order
o render it agreeable, or on account of its fragrant & stimulating quality
we should always put it in at y. close of y. process, otherwise y. fragrancy &
essential oil will evaporate; but if we add it to astringent decoctions w.
are intended y. it shall act as an astringent, y. longer we boil it, y. more
will its astringency be improved. It is frequently added to purgatives to
prevent y. Spasms y. generally attend y. exhibition of those remedies: e.g.
to an Infusion of Senna: We also add it to Rhubarb to encrease y. pur-
gative Virtues of this drug. It is one of y. safest & most grateful stomachics
ants to give in Women, when they are so reduced & low as to require
medicines of this Class. It is likewise an excellent carminative, & very
efficacious in removing the pains and oppression that are owing either
to y. flatulency of y. food or y. debility of y. chylopoetic Viscera: An
Infusion of it is also very agreeable & useful to Children, who are troubled
with Griping & other Symptoms of flatulencies. Where a suppression
of the Menses is owing to spasmodic constrictions in y. Vessels of y.
Uterus, arising from relaxation, or to flatulencies in y. abdomen, an
Infusion of Cinnamon is not only a safe but effectual remedy —

Gloves and
times adm
ordinarily
use of in
by doctors
substance
of patients
Omitting
much gri
taken w.
Mulsney.
memora
in order to
be quite
tion, al
attendies
author
of exposure
letter of
lated for
joined to
Operative
strengthen
try full
ced to
tion w. y

Cloves are more acrid & therefore more stimulating than Cinnamon. We sometimes add ~~the~~ y. oil of Cloves to our stimulating medicines; it is however most advisable not to be too free in its use. A drop of the Oil is frequently made use of in y. toothach proceeding from a hollow tooth; in this case it acts by destroying y. sensibility of y. Nerve. As it is chiefly acrid & stimulating substance it is sometimes useful in a paralytic affection of y. tongue, when y. patient is able to chew it. It may also be applied externally in Colics Vomitings & hiccups; also to y. Stomachs of infants when they are much griped & troubled w. flatulencies: A weak infusion may also be taken w. advantage in these cases; provided there is no appearance of fever.

Nutmegs are y. fruit of a tree y. grows in y. East indies, almost in y. same manner as our Walnut trees. It is said that y. Dutch macerate them in Lime Water in order to prevent their germinating if they are put into y. ground. When they are quite fresh they possess something of a narcotic & stupifying quality: Bontius, a Physician of eminence who practised physick for many years in y. East indies; tells us that a too free use of y. recent fruit will bring on stupor & even a slight degree of apoplexy. Hoffman also relates y. instance of a young woman, who upon taking a large quantity of Mace w. an intention of promoting y. menstrual discharge, was hurried w. delirium & y. rated for several hours. It is probably owing to this sedative quality, joined to an astringency, y. they are frequently employed in Diarrhoeas, & dysenteries, where by y. moderate stimulus & astringency they strengthen the tone of y. Stomach & bowels, whilst by y. anodyne virtue they lull the pain & remove y. spasms & gripings. They may also be used w. advantage in debility of y. Stomach. The Mace is y. same Tree w. y. Nutmegs & indeed a production of y. same tree, growing round

the Nation
Copper bi
and wo
to produ
people
a spoon
it fitted
by it con
much to
are extra
any inf
be the ex
our hep
and on
It is th
Suspenc

Society
ecomete
tisfactio
happen
multipl
and a
and the
first sta
the Si

the Nutmeg in ye manner of a Pickle.

Pepper is likewise a production of the Indies. It is said ye pepper finely powdered will excite a hiccup, which is ye only plant or vegetable ye is known to produce this effect. Pepper is frequently made use of by ye Country people to prevent ye cold fit of an Intermittent; they take near a spoonful of unground pepper in a glass of rum, about an hour before ye fit is expected, wch will sometimes prevent ye fit from coming on by ye continual & not disagreeable stimulus wch it excites in the stomach & system; for by swallowing ye pepper unbruised, its virtues are extracted by degrees & in such a manner ye neither much heat or any inflamation is produced by it, which would in all probability be the case, if the same quantity were taken in powder. If it however happens not to put off ye fit of ye Ague; the patient may depend on suffering severely for his rashness when the hot fit comes on.

It is therefore an ambiguous & extraordinary remedy.

Serpentaria Virginiana. This indigenous root is recommended for a variety of disorders: It is of a stimulating nature, combined wch an aromatic flavour, & according to Pringles experiments, & results, satisfaction in a very eminent degree. From these qualities they it appears particularly useful in those fevers ye are generally called malignant. However it frequently happens that stimulants of very kind are hurtful in ye beginning even of putrid fevers, on acct of the great heat & sometimes inflammatory symptoms ye accompany ye first stage of ye disorder; but in ye decline of these & nervous fevers when the Pulse is very low, & stimulants then become necessary, the

I scarce ever omit prescribing it in ye. autumnal remittent & intermittent fevers; likewise in ye. nervous fever, and in all kinds of fever that are not attended with inflamm. symptoms. I generally order it in a Tea or Infusion, and I think it is always in these cases attended with good effects. — I likewise prescribe it for the Nausea & Sickness at stomach that so frequently attends these diseases; & I have on several occasions found that when the stomach would not retain the bark when administered in ye. usual manner, that giving it in strong Snake root Tea has been the means of its remaining on the stomach & prove effectual. — I am informed that of late years it is much employed ~~in Europe~~ by ye. Physicians in Europe, which has occasioned a considerable demand for it here; & it certainly is a very agreeable efficacious stimulant & powerful anti-septic. —

Snakeroot will answer as well if not better than most of y. substitutes used for the purpose. As it is a warm aromatic & grateful stimulant it is very properly employed in autumnal Intermittents & may likewise be used as a preservative against contagious diseases; but for y. same reason it is hurtful in Vernal Intermittents & every species of Fever accompanied w. Inflammation —

Ginseng. The eastern Nations have y. highest opinion of y. Virtues of this root. They not only consider it as a present remedy in most Disorders; but look on it as an infallible means to prolong Health & prolong life, and at y. same time to invigorate the system. The truth however is that it is a substance of little or no efficacy, & ~~all~~ affords us an agreeable masticatory, exceeding in both respects y. much more nauseous herb tobacco. The Ginseng y. grows in this Country is entirely y. same species w. that which grows in Tartary & for w. y. Chinese give triple the weight of Silver i.e. For a pound of Ginseng they give 3 lbs of Silver. This rendered our Ginseng some years ago an considerable article of Commerce, as it fetched a very price in China; but when it was carried there in unusual large quantities, the Chinese imagined it an Imposition & at present value none but what they are well pleased to convey from Tartary —

Cascarilla. This is by some physicians much recommended in Putrid and Intermittent Fevers, and may also be employed for y. cure of Intermittents, when Peruvian bark is not at hand. Dyer, one of the best Writers on y. Dysentery commends this bark strongly for y. cure of y. disorder. Besides its stimulant quality it also possesses an astringent & somewhat of a narcotic quality, which render it particularly applicable in chronic ~~rheumatic~~ Dysentery —

The reg
Virtues
it was
is not
wood
tion of
in the
probable
body, a
ing y. to
tation of
act Alcan
reconcile
Virtues a
ing from
afford a
wrong ope
Order b
suited t
ction. J
for this
of kind
for y. ca
y. Ostr
by a

The next head of ~~remedies~~ Stimulants agreeing in sensible qualities & medical Virtues are yᵉ Bitters.— *Wormwood*, so called from an opinion that it was particularly calculated for destroying Worms. This opinion however is not well grounded; for tho' it ~~hath~~ prevailed very universally, & Wormwood & Wormseed have even been reckoned Specifick remedies for yᵉ destruction of Worms, yet we find yᵗ they will live for a considerable time in all kind of Bitters & bitter impregnation out of yᵉ body; therefore ~~&~~ it is very improbable that these substances should have any effect upon Worms in yᵉ body, at least immediately. A long continued use of bitters may by strengthening yᵉ tone of yᵉ Stomach & Intestines dislodge or at least prevent the generation of Worms; but then they do not act immediately on yᵉ Worms & cannot deserve yᵉ name of anthelmintic. Wormwood hath always been reckoned a considerable diuretic & recommended for yᵉ cure of the Dropsy. Its diuretic Virtues are however greatly improved by yᵉ addition of Salt of Tartar. Dissolving from ʒij to ℥ss of this in ℥viij of a strong Infusion of Wormwood affords us one of yᵉ most efficacious diuretics, & particularly useful in every species of Dropsy: where we should always endeavour to cure yᵉ disorder by diuretics in preference to any other remedy, as these are but suited to the strength of yᵉ patient & are undoubtedly yᵉ natural indication. This infusion w. Salt of Tartar affords us one of yᵉ best Medicines for this purpose, & seldom fails of giving considerable relief, if any thing of yᵉ kind can possibly effect it. Wormwood hath also been recommended for yᵉ cure of yᵉ Jaundice; it can however have little or no effect in removing the obstructions that generally produce the disorder; tho' it may be useful by acting as a Bitter & supplying yᵉ deficiency of yᵉ bile in the Stomach & Intestines ——

A strong
in opter
Theology
the ages
deal with
to depen
Condues

for j. un
ined. Th
beginning
Interrupt
may be
general
confusion
Ceremonie

indeed
of their
for it
the mind
probably
Ceremon
of an ac
act only
Tempter
likewise
Pretend
Pictur

A strong decoction of Wormwood with a large quantity of Salt is used in external applications to prevent as well as cure a Gangrene. The long continued use of Wormwood hath always been accused of affecting the eyes with an unusual dryness, contraction & inflammation attended with Headach; also of bringing on giddiness: these effects seem to depend on the narcotic quality wch. Wormwood evidently possesses.

Carduus Benedictus. This is one of those bitters y. were generally employed for y. cure of Intermittents & other disorders, in wh. the bark is now used. It sometimes happens that we cannot give the bark in y. beginning of an Intermittent, as there are neither regular nor compleat intermissions: in this case a cold Infusion of y. Carduus Benedictus may be used wd. great advantage, for it promotes all the secretions in general & particularly y. insensible perspiration; by wh. a compleat intermission is obtained & an opportunity given to administer the bark.

Camomile is more frequently employed than any of y. other bitters & indeed possesses all y. Virtues wh. are generally ascribed to the medicines of this class. It is y. substance most generally used in those diseases for wd. we now prescribe the bark: it may even still be employed for the cure of Intermittents, when it is often highly useful, and would probably be more frequently successful, if it were not apt to purge. Camomile Tea is particularly useful in intermittent & remittent fevers y. are accompanied with symptoms of putrefaction; for it then acts not only by evacuating all y. secretions; but it is likewise a strong antiseptic. This is indeed a Virtue common to all bitters; and they likewise check fermentations of all kinds, the acid as well as y. putrefactive. They have therefore at all times been celebrated for y. antiseptic Virtues, given internally & applied externally; and have always been

Did to
a any
so much
of servic
Transcrib
proceeding
of whom
lovier to
al tran
no doubt
is indu
pend is.
of a prec
frequent
the prem
Range pa
of this ob
particular
where no
while di
Not
the exper
similar
Sullage.
unison
bothered
petition,
to of

ued to preserve animal substances from putrefaction. Camomile Tea is a very proper drink to work off a Vomit; for it does not relax y. Stomach so much as warm Water; & if any remains in the System it proves of service by its Diuretic & Diaphoretic Virtues. —

Tansey, this hath likewise been always celebrated for its Virtue in preserving animal bodies from corruption. It is a common remedy with y. Women against y. hysterics: they also make use of it in their pedi, lavia to restore y. Menses when suppressed. In y. German philosophi, cal transactions it is recommended for y. cure of y. Dropsy; and I make no doubt but it will answer the same purpose as Wormwood: it is indeed of little consequence which bitter we employ for the purpose w. the Salt of Tartar, & we may regulate our choice entirely by y. agreeableness or convenience of y. substance. The Seeds of Rue are frequently employed against Worms; but I said before y. Bitters have no peculiar Virtue to destroy them.

Orange peel contains a larger quantity of essential oil than any of y. substances of this class, and is on y. account also more heating & stimulating; therefore particularly useful in Spasms, flatulencies, Griping & Indigestions where no fever is to be apprehended; but less proper in every kind of febrile disorder. —

The lesser Centaury & Gentian are species of y. same genus; they possess altogether similar Virtues, & contain a purer bitter than most of y. substances of this class. Gentian & Orange peel give us Stoughton's bitter, w. is so universally used for exciting an appetite; Gentian hath been always looked upon to strengthen the Stomach, excite appetite & promote digestion; & no doubt it will have this effect in persons not accustomed to y. use of it; but the continued use of it will destroy the Tone of

* The Columbo root is a bitter that is not much known in practice but is certainly a medicine of superior efficacy to the bitters generally employed. — It is a very strong pure bitter, gives a lively impression to the taste & appears even from its sensible qualities to be a powerful stimulant. I have used it on several occasions lately & with a marked success. — I have prescribed it chiefly in cases where the stomach was exceedingly irritable & subject to an almost constant Nausea & vomiting — I always ordered it in infusion; half an ounce of the Columbo root infused in half a pint of boiling water, and a large table spoonful or two of ye infusion to be taken every 2 or 3 hours. — In one case particularly of a Lady who was afflicted with severe & frequent paroxysms of bilious vomitings, which no remedy could prevent, this infusion was particularly useful as she hath not had a return of her complaint from ye time she began to take this medicine, which is now upwards of 3 months. — The same good effect hath attended its use in several other instances, & I should make use of it more frequently but the scarcity & dearness of the Medicine confines the use of it to cases that will not so readily yield to the more common bitters. — The gentian appears to approach nearest in virtues to it — The Columbo root hath likewise been highly recommended as an antiseptic; but I have never used it in ye intention

of the stomach, and be productive of all ye bad consequences, wch the too free use of stimulents is known to produce. The surgeon make use of ye root in fistulous ulcers, in order to preserve them clean & keep ye lips of ye wound from closing. An Infusion of Centaury answers ye same purposes as Camomile Tea & may be used in ye same cases, for wch that is recomended. Centaury as well as gentian have been used for ye cure of Intermittents, given at ℥ss for a dose & repeated every half hour; but they are however much inferior to the peruvian bark which we are next to treat off. This is a remedy so much & universally used, ye it well deserves our particular attention. It was first made known to the Governor of Loxa in South America, who by his physicians & friendly offices obtained from ye Indians of ye part of America ye knowledge of ye remedy wch they used in intermittent fevers; he afterwards in the year 1638 communicated it to the Count de Chinchon whose lady was dangerously ill. It was first brought into Europe by ye Count de Chinchon in ye year 1640, by whom numbers were relieved ye lay dangerously ill of remitting & intermitting fevers. In ye year 1649 a Jesuit brought a large quantity of it from Peru to Rome, whence it obtained the name of Jesuits bark & Jesuits powder, for ye religious of this order were at ye time the sole Venders & Purveyors of ye remedy. They sold it at a very exorbitant price: ℥ij were however in general sufficient to perfect a cure; it in a short time however lost its reputation & had been entirely neglected in practice, when Sir Robt. Talbot again introduced ye use of it in 1679; but kept ye Medicine a secret wch was only known under ye name of ye english powder: Louis ye 14th purchased ye Secret for 2000 Guineas & allowed Talbot a pension of 100 Guineas per Annum, since which time this Medicine hath been in great repute & now continues in general use.

Good book
reader who
in the Stor
it into a
of authenti
may be esp
of Bath
an accou
of Potter
specific
of prudi
uncomfor
shameful
Money to
still we
my frequ
continue
if sometim
and is th
may bow
ability
circulati
are bow
State of
publication
is this

ood bark is distinguished by its weight, firmness, brittleness & shining appear-
ance when broke, but we can form a much better judgment by boiling
it: ~~the~~ For this purpose we boil a drachm in a little rain water & pour
it into a warm glass; if the decoction is reddish when warm, but turns
a whitish or pale colour on cooling, depositing a powdery sediment, we
may be assured of its goodness, but not otherwise. From y. sensible qualities
of Bark it is evidently a Bitter combined w. an astringency joined to
an aroma. From these qualities we may explain all y. real effects
& virtues which this Medicine possesses, and I would not allow it a
specific action in a single Instance or disorder. It is evident that
the peruvian bark can only be of service in Disorders founded on or
accompanied either w. general or partial debility; & that it must of course
be hurtful in rigidity, plethoric state of y. body, or wherever there is a
tendency to fever & inflamation from this cause. This is illustrated by
what we observe in Vernal & autumnal Intermittents: the former are
very frequently accompanied w. inflamatory symptoms, whilst the
latter y. bark is undoubtedly hurtful; whereas in the latter debility,
& sometimes a tendency to putrefaction, takes place from the first paroxism.
And in this species of Intermittent the bark is constantly useful. We
may observe the same of obstructions, whenever these are occasioned from
debility & relaxation of y. Solids, by w. they are unable to propel the
circulating fluids, y. bark is a useful medicine; but when obstructions
are owing to an increased action of y. heart & arteries & a plethoric
state of y. system, there would be the greatest impropriety in ordering the
peruvian bark. It is in the cases I just mentioned that y. bark
is chiefly used, and in which Physicians have supposed it to possess

Assuming
hidden
the Justice
pressed
to take
thod of
very
the Symp
or rather
for it is
produced
the Pa
with so
ting to
clude
shall hav
disorders
persu
in all
bility
by pa
un to
the one
think i
is most
fear
by bel

a specifick action, by which they mean a peculiar mode of operation,
hidden from our sight & inexplicable upon any rational principles.
The instances ye mentioned contradict their opinion, which if it once
gained ground, & we should allow ~~for~~ ye specifick action of Medicines
to take place, there would quickly be an end of Science &c. The best me-
thod of taking ye bark, is in substance, from ℥ss to ℥ij for a dose, repeated
every ~~hour~~ 2 or 3 hours, also at longer and shorter intervals, as the urgency of
the symptoms require. Sometimes it is necessary to give in decoction,
or rather infusion; in this case however its operation is not so certain;
for it is apt to pass off quickly by stool & urine & then will not
produce ye effects long enough to be of any considerable service.
The Bark has been recommended for a variety of diseases, sometimes
with & often without reason; and it is now become a very common
thing to prescribe it, where the disorder is of such a nature as to
elude our investigation, and trust to providence for its effects. We
shall however endeavour to ascertain its real uses & enumerate the
disorders in which it may be given with advantage. — It is indicated
in all spasmodic affections, where there is too great mobility & irri-
periodical
tability of the system: here it acts by giving a proper tone & strength
to ye parts, and thus preventing ye return of the paroxysms; but
we are in these cases, we should avoid making use of it, whilst
there are any symptoms of Inflammation. Thus ye Chincough
which is evidently a spasmodic disease, and observes a regular type,
is most effectually cured by ye bark, given on those days in which the
fever & other symptoms are most moderate; but is aggravated by
ye bark if this be given in ye first stage of ye disorder, before the

inflamm
cessary
corpuscu
y. contrib
for in the
It may be
the day a
cul in Spe
Irritability
cum it a
naturally
pin empe
stick is
ne to pre
d, and a
ally. —
is effusion
ence of di
strengthen
of a neig
the bound
ation of
inflamma
which a
tion of y

inflammatory symptoms are removed by Emetics, Bleeding & other necessary evacuations. — But the y. bark is useful in preventing y. paroxysms of spasmodic disorders; it is improper during y. fit, when y. constriction is already formed in a particular part or y. whole system; for in this case, instead of removing, it would add to y. constriction. It may be employed in periodical fits, y. return at a certain hour of the day, and are evidently of a spasmodic nature. — It is sometimes of use in Epilepsy, when we can trace the disorder to be owing to y. mobility & irritability of y. System, and not fixed within the Brain. — In these cases it acts by taking off relaxation, on which an increased Irritability generally depends, & restoring y. proper tone of the System. — It is likewise employed w.th success in a gangrene, particularly however y. species which is owing to a weakness & relaxation of the Solids. In this case we are to give 3ss every quarter or half hour, as the patients stomach can bear it; and at y. same time apply fomentations or Poultices of bark externally. — Its action in Gangrene is generally reckoned specifick; but this is a Mistake, it acts entirely on y. principle of a bitter & astringent w.h have at all times been known to resist putrefaction. It is useful by strengthening & exciting y. action of y. sound parts, by w.h a suppuration & a necessary inflamation is produced, y. separates y. mortified from the sound parts. But when the Gangrene is owing to an increased action of y. heart & Arteries, and is y. consequence of a very high inflamation, y. bark is by no means useful; but in this Case, Acids which at y. same time by y. they resist putrefaction, also diminish y. action of y. heart & Arteries, are the proper remedies. This is further illustrated

d by y. effects we observe from it even in Inflammations, which are occasi-
ned by a weakness of y. Solids. For y. bark will remove this species of
flammation effectually by adding Vigour & strength to y. relaxed Vessels &
nabling them to propel their Contents; whereas in an Inflammation owing
the too great action of the Solids & Impetus of y. fluids, this remedy
ould not only be highly improper, but even attended w. y. worst of
mes, & instead of removing y. Inflammation, produce a Gangrene
rom this Instance then it is evident that y. Bark can have no
ecifick action in these Diseases; but on the contrary its operation
very easily explicable on the well known principles of its being
timulant & is analogous to y. operation of other Stimulants,
tho in a more eminent degree, which our next Lecture will afford
n opportunity of explaining more fully. —

e Peruvian Bark is principally & universally employed for the cure
Intermittent & remittent fevers. In these cases it hath been supposed
act as a specifick; this is however a mistaken Notion; for its prin-
cipal action in these Diseases depends on its bitter quality combined
h an adstringent Virtue joined to an Aroma. And if it were possible
r us to imitate by art y. natural qualities of y. bark, we should
experience equally good effects from our combination. Bitters & Adstringents have
een always employed for the cure of these disorders, and I have
een a composition of Gentian & Galls cure y. intermittent effectually
ftr the bark had been tried to no purpose, owing indeed to its
ad quality. If we were better acquainted with y. nature of Intermit-
ents, we should be also able to account for y. operation of this
medicine in curing it; but y. opinions of physicians w. regard to
y. nature of this disease are so vague, undetermined & contradictory

Aloes
in Virtues
anisony
tations
disorders.
digestion,
& air co
Senilis
may cop
who lies
afflicted
tion Win
Stephen
relaxed
an effica
Rebham

Acorus Verus, Calamus. This is both an astringent & stimulant, approaching in Virtues to ye. Peruvian bark, but possessing a greater degree of aromatic aromatic & essential oil. It hath formerly been employed in ye. same cases as ye. bark is now, and still continues to be used in particular disorders. It is recommended as a stimulant to excite appetite & spirit dejection, & is useful in Colics & flatulencies arising from indigestion & air confined in the Intestines. It may also be used in ye. catarrhus Senilis & asthma humorale & pituitosum, when by its stimulus it may expede expectoration. Fallopius a very eminent Physician who lived in the 16th. Century assures us that he relieved many persons afflicted w. a suppression of Urine, by a decoction of Calamus in a small Wine. It is likewise recommended in paralytic affections to stimulate the relaxed & inert fibres. — Where the tone of the stomach is greatly relaxed it may w. great propriety be combined w. steel, & then affords an efficacious stimulating & strengthening medicine.

Philanthropitys Groundpine with some other bitters afford the Duke of Portland's powder for ye. Gout, which is a Medicine ye. at one time had required a considerable reputation in gouty cases. It consists of equal parts of ye. roots of Birthwort, Gentian, Germander, Groundpine and Centaury: all of them to be well dried & reduced into a very fine powder; of which a dram is to be taken every morning fasting in a cup of Wine & Water, broth, tea or any other Vehicle, ye. is most agreeable; to keep fasting an hour & a half after. This course is to be continued for 3 Months without interruption; when ye. dose is to be diminished to ℈ss of a dracham for 3 months longer; then to ℥ss for 6 months more, taking it regularly every morning if possible. After the first year it is sufficient to take ℥ss every other day. If the Medicine operates sensibly, it may be 2 years, before any great benefit is received from it.

it is said
particular
always be
late Dak
was relieve
receipt
might al
the me, co
contrived
vertices,
the lateri
the sanguin
scribed, a
direction
the lancet
case sh
a along
thoroughly
hand co
one was
with war
to elac
can m
pump k
compe
nothin
in the
how the
the end

It is said to work slow but sure, and tho y. patient is not confined to any
particular diet, yet he is to live soberly & abstain from those meats, y. have
always been accounted pernicious in the Gout. It was by y. medicine y. y.
the Duke of Portland, who had been severely handled by a hereditary Gout
was relieved from that troublesome disorder, upon which he published y.
Receipt w. y. directions for use of y. Medicine, y. others in similar cases
might also receive the benefit of it. The Remedies of this kind have been
in use, ever since the Gout was known; many Recipes have been
contrived for the purpose; all of them however correspond much in
virtues, and are chiefly compounded of y. different species of Bitters.
The Antients distinguished y. podagra & arthritis into 3 sorts, namely
the sanguineous, bilious & spituitous, from the nature of the humour de-
scribed, as they supposed, on the part affected. Agreeable to this
distinction they directed their practice: in the sanguineous they used
the lancet freely; in the bilious too they bled often, and in all of them
gave stimulating purgatives; after which they put the patient
on a longe course of stomachic bitters that much resembled in compo,
their virtue the Gout powder I just now mentioned. They generally
prescribed them in y. form of an Electuary, made up with Honey; the
dose was a drachm, or the bigness of a hazel nut, in y. morning fasting,
with warm Water. This was ordered to be continued for the space of
two or three month, but not without interruption or lessening the dose, as
the case might require. At certain intervals too, as every 2 or 3 months
a purge was thought necessary; however it was necessary at any rate
to compleat the year, for so much time was thought necessary for a cure.
If nothing hastened or retarded this course, their method was to begin
it in the spring or Autumn; in cold phlegmatic constitutions they
chose the ~~spring~~ beginning of y. spring, in y. hot, dry & bilious ~~[illegible]~~
the end of Autumn

They recom
boys other
Office or
boy cau
Constitution
of Philosophical
Students
persons
principles
persons.
members
it had
but on
Sovereign, th
of Protest
he was
in letter
and appl
to happen
enough
Dissa
Govt
paid dow
time of
were to
were to
give th
himself

They recommended the med.ne however chiefly in cases y.e and not of long standing & seem to think them no longer safe past y.e term of five or at farthest seven years from y.e first attack. They are also very careful not to recommend them indiscriminately for all persons constitutions; on the contrary they thought them extremely hurtful in y.e hot & bilious, and only proper in cold & phlegmatic constitutions. A Medicine exactly similar to the Duke of Portland's powder, was long known in Italy and other parts of Europe under y.e name of Pulvis principis Mirandola, and was employed in those places for y.e same purpose. —— Upon the Medicine being first published in England numbers of persons soon made use of it; and in the greater part it had y.e effect of preventing y.e appearance of y.e Gout in y.e extremities, but in a short time after they were seized with more terrible disorders, that soon put a period to their life: this happened to the Duke of Portland amongst others, who died of an Apoplexy, a few years after he was freed from y.e pain of y.e Gout. Dr Cullen observed the same thing in Scotland in 12 Gentlemen who made use of this remedy, all of whom died apoplectic in a very few years. Dr Cadogan found y.e same thing to happen in Holland, tho these persons who took y.e Medicine long enough to prevent any appearance of the Gout. It is but a few years since a foreign Physician arrived in England, who undertook to cure y.e Gout radically: his terms were to receive 150 Guineas, one half to be paid down, & y.e other at y.e expiration of 18 Months; for the time y.e patients were to be cured of their Disorder, & for that purpose were to persist in y.e use of his remedies for 18 Months, before they were to expect any relief, or else forfeit the fee w.h they engaged to give the Doctor. Amongst others the Marquis of Granby submitted himself to his care; but died apoplectic, before the end of the term

Signed: the
expedy to
stage ad. y
pernicious
who made
gist to a
many alle
Of appear
tition
the Court
facia pri
on ij. h
steven
whether
Gentlem
a fit
speak ag
By the
tition, s
See fol.
attach
also
letter
Sheriff
Dover
mar
vings
had

lized: the same happened to several others: from which & ye time ne-
cessary to complete a cure, I judge his remedy to be of a similar na-
ture w.th ye Duke of Portlands powder, & to be attended w.th ye same
pernicious consequences. Calves Cauliflower observed in his time ye persons
who made use of these stimulating bitters to cure ye gout were thence sub-
ject to a variety of disorders & died of Apoplexy, pleurisy & peripneumonies:
many also to be affected w.th a shortness of breath & difficulty of breathing.
It appears as if by ye continued use of these stimulating bitters the consti-
tution is so exhausted, that nature hath not strength sufficient to force
the gout into the extremities, by which indeed the person is freed from ye
painful sensation & inflamation in the feet, but then it is thrown
on ye head Lungs & Bowels & shortly puts an end to ye persons exis-
tence. This also happens from any other cause ye debilitates ye system
whether it be the use of medicines, improper living or age. I know a
Gentleman in this place who was annually severely tortured by
a fit of the Gout which he could always know to be coming on,
by a heaviness which affected him for several days before ye accession of the paroxysm.
By the advice of his physician he took some stimulating purga-
tives, so as to produce several copious evacuations, by which he mitigated
his fit, & was totally well for the remainder of the year; the next
attack yt threatened him was removed in the same manner: the third was
also prevented, but instead of ye Gout, he was seized with a stupor &
Lethargy w.th ye most imminent danger of his life; from which he was
however recovered: he had a slight attack of the Gout, & now lets the dis-
order have its course, without endeavouring to intercept it in any
manner: His paroxysms returns regularly every spring & he lets not
the slightest symptom of an Apoplexy or Lethargy

The natural
swelling &
appearing
& should it
by any th
act of the
Shoulder, Th
vation of
this obje
But may
consideration
especially
Neck, Still
of it; it
for if
I shall
for it, det
rate
objection
cases
is
this place
the cause
in respect
Yr Gentle
Yr Gent
Sunday 1

The natural & salutary appearance of y. Gout is in extremities, as a topical swelling & inflammation; nothing therefore should be used to prevent its appearing in y. manner, unless we could at y. same time cure it radically & throw it altogether out of y. body. This however is very improperly attempted by any thing that comes under the head of medicines; for a long continued use of them cannot in the end fail of doing considerable injury to our health. There are however instances of its being cured by a very strict observation of Regimen & living altogether on a Milk diet; but then this ought to be attempted in y. early periods of life; for a milk diet may be too low & weakening for particular constitutions, especially when advanced in years. — The proximate cause of y. Gout hath been eagerly enquired into by every physician, who hath treated of this disorder. Yet one of them hitherto have been able to give us a satisfactory acc. of it; it appears most probable to have its seat in y. nervous system: for if y. causes were lodged in the fluids or simple solids of our body I think it could not have escaped the accurate investigations in y. search for y. discovery of it. It is also brought on chiefly by those causes as operate principally on the nervous system: But what particular species of pain and it is y. they affect y. Nerves, will probably be for ever concealed from us. The following case from y. London medical Essays is of so singular a Nature, that I think it well worth repeating in this place. It is attended with such Phenomena as seem to establish the cause to be in the Nervous system, tho it at the same time is almost impossible to account for the symptoms in a satisfactory manner.

A Gentleman 45 years of age sober & temperate, subject to no disorder but y. Gout, y. returned once in 12 or 18 Months; was about y. Month of June 1752 seized w. a very severe paroxysm of y. Gout & this induced

time to try
filing flux
y. most acc
Wahr, Cen
to his anem
1753 was
fresh extract
he was in
such as alw
prime
to y. labor
y. heat
left entire
half a
bottle the
y. tuyer,
anvil an
in y. bro
upon the
digest,
mineral
immediate
washed
but y.
or effect
of
Ounce
by ov

him to try ye effects of a Milk & Vegetable diet in ye resolution of renouncing
Bile & flesh for ever, if this course answered his expectation. But after
ye most religious abstinence from animal food of every kind for eleven
Years, being visited by a gentle attack in both feet, he returned immediately
to his animal food. This paroxysm continued but 48 hours: but in March
1753 was succeeded by a very severe one in both feet. The pain in his feet
heels & ankles increased in great violency for about 10 or 12 days; till at length
he was in ye most extreme agonies, such as he had never felt before &
such as almost deprived him of reason. In the height of this extremity, the
pains flew from ye feet heels & ankles, flew as quick as lightning directly
to ye calves of his legs; but ~~not~~ remaining there not half a Minute, & not in
the least abating of their extreme violence through ye feet heels & ankles were
left entirely free from pain from ye calves, after a short stay of about
half a Minute, ye pains ascended in ye same Velocity as before, to
both the thighs, at ye same time leaving ye calves of ye legs free: from
ye thighs, in less than ye space of one Minute, & as quick as before they
ascended at ye abdomen, and after giving ye patient one most severe twitch
in ye bowels, they reached ye stomach: here the pains, & here the fit ended,
upon the patients vomiting up about a pint & a half of a green aqueous
liquor, but so extreamly corrosive, ye he compared it to ye strongest
mineral acid — This extraordinary crisis happened about 2 in ye morning:
immediately after this discharge he fell asleep, & slept till seven or eight, &
waked perfectly easy in every parts no signs of ye distemper remaining
but ye swellings & tenderness of his feet; both of which went off gradually,
so that in 2 days he was able to walk about his business. —
The next fit seized him in February 1754, in ye common way, but was
less violent than ye former, & continued for about six weeks; during

which seem
being about
by vomiting
stomach as
day to wa
fit for g.
least ~~the~~
which ever
three ever
g. least e
before the
charge;
of these vom
gentlemen
The civil
there were
attended
very offe
g. truth
visible
wine
g. tribe
On the
term he
Jamie
pecte

which time he had 3 increased paroxysms, or distinct smart fits, w.h held him about 2 hours each; in the last of which he had y.e same critical discharge, vomiting of y.e same corrosive matter, preceded by y.e same uncommon symptoms as in y.e fit of 1753. But mending every hour he was able the next day to walk & attend his business, w.h more ease than after y.e first mentioned fit; for y.e swelling abated much sooner & in 3 days disappeared. This last fit ~~it was~~ was attended w.h three distinct paroxysms, y.e last of which ended as above; but it is remarkable that in the two first of these increased paroxysms of pain, y.e patient declared y.t he never had y.e least ease till he had vomited; but as there was no translation of y.e pain before these vomitings, there was none of y.e corrosive matter to be discharged; nothing but y.e common contents of y.e stomach was to be seen. These vomitings however procured y.e patient some ease, but y.e fit of y.e gout went on, till y.e 3.d paroxysm was over, w.h ended as hath been related. The crisis in this case was very uncommon, but in both these paroxysms there were some symptoms no less extraordinary: A most profuse sweat attended y.e patient every morning during y.e whole course of y.e fits, w.h was so very offensive & at y.e same time his breath so ~~uncommonly~~ stinking y.t neither y.e patient ~~himself~~ nor those who waited on him, were ever sensible of the like. His linen was tinged as if w.h Saffron & his urine ~~also~~ very high coloured, of almost as deep a red as blood: but upon y.e critical vomitings every one of these symptoms disappeared w.h y.e disease. On the 9.th of December 1755 he was again attacked in one foot; y.e symptoms however were so very mild, that he took no notice of them to his family, till y.e 12.th; from y.e day y.e pain was aggravated & y.e swelling greatly increased, by walking, & riding in a coach. On y.e 17.th it became

outwardly
greater effect
over the
ched y. Sto
as and y. to
sponsful
tonat of Sa
hereupon
Sp. Brine
Shappy y
upon fini
immediate
but in Dei
wanable
nated wa
same effe
Divine y
y. Word
till after
upon y. d
shall
happene
in Spirit
or found
of Christ
Spirit y
Word, th
always

extremely violent, particularly in the heel; when it instantaneously left ye
Parts affected & in ye same manner & with equal velocity, as if ye two for-
mer fits; it flew into ye calves of his Legs, thighs & abdomen; & when it had rea-
ched ye stomach caused him to vomit the same kind of corrosive acid
, in ye two former fits; & though ye quantity was no more than a tea
spoonful, he became perfectly well in two days. — The same Symp-
tom of fetid urine & offensive sweat, attended the patient in this short
paroxysm, as in those of 1755 & 1756; ye sweat continued but two Nights
& ye Urine fetid 48 hours. — As the ~~Gentleman~~ Person had experienced so great
happy effects from the former critical vomitings, he was greatly disappointed
upon finding ye quantity evacuated so very small; for which reason he
immediately attempted to increase it, by drinking 3 pints of warm Water,
but in vain; for neither ye nor ye use of his fingers, could prevail to an
evacuation wh. was begun & finished by nature; for though ye quantity ev-
acuated was so very small, yet as it was equally corrosive, and produced ye
same effect, ye discharge must be accounted as truly critical as ye others were.
During ye first of these fits in ye year 1752, a hard tumor had appeared on
ye side of ye metatarsus near ye middle of ye right foot, which continued
till after ye third critical vomiting; when it was resolved & totally disappeared
upon ye discharge of a viscid matter, like ye white of an egg, with a few small
chalk stones from ye end of ye middle toe of ye same foot. This discharge
happened about four or five days before ye patient was seized wh. an ague fit
in April 1754. But it is to be remarked that this last fit continued three
or four Weeks & went off in ye common way, wh. out any of ye critical discharges
of Vomiting, Urine & sweat; but left on one hand three & on ye other two
fingers loaded wh. chalk stones; wh. this peculiar Symptom ye when ye Weather was
cold, those fingers were affected wh. a most exquisite pain, which was
always removed by heat

But not
were up
that from
January
was seized
went of a
always
But y. fo
so. y. c
for abo
up mo
uncom
where
fire or
smile
flow
y. tra
matter
with
of thro
as th
for y.
cas. fo
of y.
use
fo

But not long after this last mentioned fit, a large quantity of chalk stones were extracted from ye. bottom of ye. left foot, near ye. ball of ye. great toe, & shed from time to time, for about three or four months. On ye. 19th of January 1786 (ye. Wound occasioned by ye. chalk stones being still open) he was seized with a fever, without any symptom of ye Gout. ye. fever went off on ye. third day, w.th ye. same kind of critical sweat and urine, as always accompanied ye. acid vomiting in ye. forementioned fits. On ye. fourth day from ye. attack of ye. fever, a fit of ye. gout came on w.th ye. common symptoms, in both feet, which continued w.th violence for about a week, w.th frequent reaching & vomiting, but without bringing up more than ye. common contents of ye. stomach. At this time an uncommon itching in ye. bottom of ye. foot & ball of ye. great toe, from whence ye. chalk stones had been extracted, tormented ye. patient for five or six hours. Upon his gently rubbing ye. part, he was very sensible of a fluctuation of some matter, which soon appeared to flow at first in small quantities from ye. open orifice in ye. ball of ye. toe. Upon pressing ye. part, about a teacup full of a liquid chalky matter was collected. The next morning the patient made a large opening with an improved knife, which produced more than half a pint of bloody sirous matter, full of chalk stones, which proved as truly critical as the vomiting of ye. corrosive acid did, in ye. cases above mentioned; for ye. orifice from whence the chalk stones first issued, was very soon healed & ye. gentleman continues in perfect health. — This is perhaps one of ye. most curious cases of a gout recorded in physick, and from which we may make several inferences; tho it is almost impossible to act for every symptom that occurs in it. The Gout travelling so much

and 5. [illegible]
[illegible]
[illegible]
[

ed w. stated stages, to y. Stomach we know it to be entirely a nervous
ffection; for if it had moved w. y. ~~circulation~~ blood & been carried along
y. circulation, it must have had a continued motion, neither quicker
or slower than y. movement of y. blood; it could not have stopped in its
rogress, and before it could have arrived at y. Stomach, it must have
ssed y. heart — But of all y. Symptoms y. Vomiting of an corrosive
ed, is perhaps y. most singular. It must in a manner have been
produced at y. moment that y. Gout arrived in the Stomach; for we
do not find y. y. patient had any disagreeable sensation in the Stomach
efore y. Gout attacked that part; & as soon as the Vomiting was over
he pain & Gout were no more. This corrosive matter could not have been
he cause of the disease; for he had several paroxysms, y. went off without
ny evacuation of the kind, & he was as free from y. disease, as if this
vacuation had taken place: tho he was not so speedily & suddenly relieved.
It is highly probable that unless y. evacuation however had taken place
he would have continued a longer time in the fit; and so long untill
Nature had eliminated y. offending cause out of y. body either by sweat
or urine, as had happened in other paroxysms. We even find y. in the
paroxysm w. attacked him in y. month of February 1754 after it had
lasted for 6 Weeks, during which Nature made 2 attempts without success
to throw the disorder off by Vomiting, at length accomplished it at y. 3d
but instead of a pint & a half that had come away in y. former fit
ed. had lasted only 10 days, he now brought up only a tea spoonful,
and was effectually relieved from his disorder. But as all our reasoning

Of late years another Gout doctor hath made his appearance in England & Ireland. — He goes on a different principle from any of his predecessors. It is not possible to learn any thing of his method, as he exacts an oath from his Patients that they are not to discover by any means the method he employed for their relief. — They are permitted indeed to tell that their relief was not owing to any medicine whatever, taken either internally or applied externally. — We can therefore only conjecture that Regimen & Exercise, applied perhaps in a particular mode must perform the Cure, for I have been informed that Persons crippled with the disorder have been ~~perfectly~~ restored to perfect health. —

as the subject can only arise from probability, we shall dismiss the subject, untill something more perfect appears on this head. The opinions & theories which have been hitherto formed & entertained of ye. Nature & cause of ye. Gout, are by no means satisfactory: they will not at least account for being phenomenon of ye. disease; & unless they do that, they cannot be said to explain the Nature of it.

Leontodon, Dandelion; Cichorium, Succory; Endivia, Indive; and Lactuca, Lettuce; all agree in similar Virtues: They have been reckoned of a cooling Nature, but probably for no other reason, than ye. we frequently employ them as Sallads. They have been recommended for resolving obstructions in the Liver and other Viscera of the Abdomen. For this purpose Boerhave, Van Swieten & others particularly commend the Succory & Dandelion. The expressed Juice is generally made use of in this case, and if we are to believe the Authors just quoted, with very good effects. It hath been observed that Cattle feeding on dry Provender during the Winter, generate bile concretions in the biliary Vessels and also in the Kidneys, but upon living on Grass in the Spring, these concretions are dissolved or at least expelled out of the body. The juice of the Dandelion & Succory have been supposed to possess similar Virtues, & and very universally prescribed in those cases where obstructions & concretions are suspected in ye. Viscera. They may be taken in very large quantities, and cannot be attended w. any bad consequences, even if they are of no advantage.

Arum, Indian Turnip. This in its recent state is very acrid & hot, and if taken in any quantity occasions of deleterious effects: Stahlin mentions an Instance of Vomiting of blood being produced by it: Dr Storck tells us of a Lad who upon swallowing a considerable quantity of the recent root was attacked w. a Cardalgia of which he died. It is said that Vinegar is a good antidote to it, & will entirely destroy its acrimony.

flous ~~the~~ acrimony by drying, and on roasting or boiling it is altogether destroyed so as to become eatable; for which purpose the Indians on this Continent use it very generally. Given in moderate quantities it stimulates the stomach, excites appetite & assists digestion. It is therefore sometimes given when the peristaltic motion is inert & languid. It may also be employed as a diuretic in dropsies; and as a pectoral in the pituitous asthma & catarrhus senilis. It has also been used for ye. cure of Intermittents, and when fresh may be given from 10 to 20 grains for a dose, beat up into a Mass & made into pills. It is recommended in paralytic affections given both internally & applied externally. Imperatoria. Nolan recommends this root much in paralytic affections. It is a good masticatory in ye. rheumatic toothach. The Country people in Europe ~~are~~ employ ye. powder for ye. cure of Intermittents. The powder mixed in Hopland hath ye. effect of curing Ring worms. It is an acrid stimulating medicine & may be employed in those cases ye. require medicines of this kind.

Iris nostras. All ye. species of this Genus are remarkably acrid: the acrimony exists principally in ye. root. The Florendine Orrice is also acrid in its recent state. If they are taken up into ye. Nose they prove very strong errhines, not only occasioning a sneezing, but frequently also inflammation of the eyes & head. If it is given internally it proves a strong cathartic & may be employed as a Hydragogue. We have an Instance in ye. ed: medical essays of its having been attended w. success in a dropsy. The best method for using it is to steep ye. root & macerate it in cold Water: the patient is to drink of ye. infusion as occasion requires: given in this manner it will prove a powerful diuretic: the common Water flag ye. grows plentifully in the Marshes & low grounds every where, will answer extremely well for this purpose. Mr. Golden found it to be a very strong cathartic as well as diuretic.

Wine likewise comes under the head of stimulants, tho' it is much oftener used as a Medicine, than a part of ~~common~~ drink. The propriety or impropriety of every Wines hath been so often & so copiously treated of that nothing can scarce be added on the subject, and notwithstanding the daily instances of ye bad effects of a too liberal use of Wine, few persons drink the less on ye account. That a free use of Wine is in general hurtful needs no proof, and tho' many persons drink it freely without sensibly any great inconvenience from it, yet ~~many~~ the greater part pay dear for a short lived pleasure. It undoubtedly enervates ye system, disposes to the Gout & Stone & is productive of many indirect & painful disorders. It moderate use of it is grateful to the Nerves, equites ye action of ye Stomach & all ye functions of ye body raises the spirits & banishes sorrow & care. But as it is almost above of ye human oeconomy ye we are in general depressed ~~after~~ in proportion as the spirits have been artificially raised, so we find that people in general after a too liberal indulgence in Wine are relaxed, debilitated & ful of ye inconvenience of corporal disorder by being unfit for ye exercise either of body or mind. Proper administred, Wine affords us an excellent remedy [illegible] wise to be wished that its use was confined to the restoration of health instead of being abused & occasioning disorders. It is serviceable in all cases of Weakness & languor of ye whole system, in Indigestion and Weakness of ye Stomach, such as constantly accompany ye hypochondriac disease: in which case a chearful glass of a generous Wine is extremely useful. Dr Cadogan draws one argument ~~against~~ for ye Wines being noxious, from ye effects it is observed to have on animal flesh, as out of ye body: for he says, & very justly, that it hardens & renders it out of ye body: for he says, & very justly, that it hardens & renders

them more
our follow
shed we
of y. Forma
y. contents
of every p
of the fiction
probability.
y. pattern
employe
principal
the action
tore of an
contain it
head we
the Wise
der is acc
were be
but suppo
frequently
sincerity fo
more cri
it be pion
which is
of. hear

them more firmly at ye. same time exciting satisfaction. It does not how-
ever follow ye. it is necessarily attended wth. ye. same effects in the stomach,
where we find it will assist digestion by stimulating & exciting ye. fibres
of ye. stomach to action & thus enabling them to act more powerfully on
ye. contents of that Organ; & I believe it is consistent with ye. sensations
of every person that a glass of Wine will generally relieve the weight &
oppression occasioned by a full meal or by food ye. is of difficult
solubility. — Wine is also an excellent remedy & ye. best cordial, where
ye. patients strength is exhausted by long & chronic diseases. It may also
be employed in various kinds of fevers. Fevers may be reduced under two
principal heads: those that are attended wth. languor & debility, or where
the action of the heart & arteries is too low for ye. purposes of life: & 2dly. into
those ye. are of an inflammatory nature, or where ye. action of ye. heart &
arteries is too vigorous & exceeds ye. standard of health. Under the former
head we refer ye. nervous & all kinds of putrid & malignant fevers. In
these Wine is both an agreeable & efficacious Medicine; and where the disor-
der is accompanied wth. symptoms of putrescency, nothing can exceed or
scarce be equal to ye. use of it: it not only heals putrefaction
but supports ye. strength of ye. patient & restrains ye. colliquative sweats, ye.
frequently destroy ~~ye. patient~~ them. It is not an uncommon symptom in these
diseases for miliary eruptions to make their appearance & they frequently
prove critical; in this case Wine will not only support them; but if
it be given wth. judgment it will never hurt ye. body of some these eruptions,
which is not seldom done by administering stimulating & heating medicines,
ye. have very improperly obtained ye. name & reputation of being cordial.

the medicine
off by Wine
any other
delicious
cases found
ordinary
in reward
ed action
cined by
by these
proper in
on the head
becomes fall
it may be
taken to
e legal Dose
rine Phy
on the Spir
were used to
ical effects
may certain
always
The best m
diluted with
antiparalytic
of Patrice

the rollefumes wd. is often very great in these diseases is most effectually taken
off by Wine. Dr Gilchrist carried ye. use of Wine farther in these cases, than
any other physician ever attempted to do; for he orders it even in a high
delirium & inflamation of ye. Eyes, & he says he always was in these
cases found it ye. most effectual remedy to procure sleep. Delirium &c
redness & inflamation of ye Eyes is by no means an uncommon symptom
in nervous & putrid diseases: they are not in this case owing to an energy
d action of ye. Vessels & impetus of ye. fluids; but are on ye. contrary occa
sioned by a weakened action & languid circulation; Wine will therefore ren
dy these symptoms in fevers of this kind, whereas it would be highly im
proper in inflamatory fevers. If on using it we find that ye energy
of the heart & delirium we should not persist in ye use of it; but if the pulse
becomes fuller, softer & slower, and a gentle moisture breaks out on the skin,
we may be well assured of its utility & then order it freely. I have known
it taken to ye. quantity of 2 Bottles a day; in general however one bottle is
a large dose; ye. precise quantity however can only be determined by experi
ence & by ye. particular effects wd. it produces on ye. patient. Much also depends
on the particular habit & custom of the patient; for a person who is here
used to drink a bottle or more of Wine a day without perceiving any
real effects from it, should be ordered in proportion when he is sick &
may certainly take a much larger quantity than one who hath
always used it very sparingly or perhaps not been accustomed to it at all.
The best method of taking it, is in a weak Negus, or mixed plentifully
diluted with water. It acts by supporting the vital powers & also by its
antiseptic & antiseptic quality; by which it takes off the acrid & corrosive
putrescency in the stomach & intestines, which frequently by the irritation

it occasion
the avenue
in the leg
to decline
in the tunnel
ded it in
cause of an
had no
appeared
however we
in the
inflamm
suppuration
fever, at
the strength
an intermit
and rather
fever, &c
of the first
revival &
hemorrh
plague rag
had died of
pain; for
fear was
mind to
how the

occasions, adds considerably to the fever. Hence it was is not solely confined to the nervous & putrid fever; but it is also frequently fatal & observable in the last stage of an inflammatory fever, when the powers of life begin to decline & ye disorder tends to putrescency. This is not seldom ye case in the small pox, & you will therefore find that Nations have greatly contributed it in this disease. The late Dr Wright of Edinburgh related to us the case of an officer, who laboured under a malignant kind of small pox & who drank no less than seven Bottles of Claret in one day, which appeared to be the principal means of saving his life. It is not however every kind of Wine ye may be used with equal safety & advantage in these Diseases: The strong bodied Wines are in general too heating & inflammatory, and we should prefer the grateful acid Wines: as Burgundy, Claret or Rhenish, which by their acescency allay ye heat of fever, at ye same time that by their spirituous parts they support the strength of ye patient. By their acescency they also act more powerfully as antiseptics; whilst Madeira, Port & the other heavy & heating Wines are rather more proper to preserve us against contagious & epidemic fevers, & quenter ies &c. — It is an observation with many Physicians of ye first eminence, that Wine drinkers are seldom attacked w. the nervous & putrid fevers; whilst the Water drinkers seldom escape them. A remarkable Instance of this happened at Marseilles, the last time ye plague raged in that City. The greater part of ye physicians died of ye plague had died of ye plague, so that it was necessary to have a supply from Spain; four were accordingly sent to their assistance, who imagining ye fear was ye principal cause of ye contagion seizing a person, were determined to keep themselves cheerful & to banish all fear; for this purpose they kept themselves merry & gay w. Wine; by which they all

excepted
to visitation
in their
Malkijeed.
nutritious
never order
as
as well prove
Grimpro
an active
as they
Statutories
in the
all are
es; for
applied
Stimulan
In this
will
remarkable
They
Variation
effect
now as
various
of
fact, and
was

escaped the Contagion, & kept as many others from it, as were willing
to imitate their example but the Medicine had probably as much scale
in their Safety, as their Courage.

Malt Liquors. These on account of y. farinaceous matter which they contain and more
nutritious than Wines: they are also more aucent, more laxative & flatulent. We
never order them as Medicines; tho they are extremely well adapted for y. use of
as well as preservation from the Scurvy. In particular diseases they are hurtful
& improper: for wherever there is a debility of y. chylopoetic viscera, and
an active aucent fermentation takes place in the stomach; these Liquors
as they are subject to undergo y. process are extremely hurtful, & will occasion
flatulencies, spasms & the whole train of evils, y. attend an aucent fermentation
in the stomach.

We are next to consider those few stimulants which the animal kingdom affords
us; for as animal bodies are in general of a bland & mild nature, we cannot
expect many medicines of a stimulating quality. In all animals however, the
secreted fluids have generally a considerable degree of acrimony & consequently of
stimulus; and as such we shall treat of them under the Class of Acrimonies.
In this place we shall only treat of those y. are employed as stimulants, w.
will confine us to a few Insects y. cause their Indication. The most
remarkable & considerable of them is the Spanish fly or Cantharides
the most common use of these is in external applications, where from their great
acrimony they stimulate & inflame the skin & occasion blisters: of this
effect we are not however to take any notice at present; but treat of them
now as a remedy that is seldom employed for internal purposes and to
mention particular Indications in the cure of diseases. — Hippocrates & many
of y. Ancients imagined that y. acrimony was chiefly lodged in y. head, Wings &
tail, and therefore banished these parts from his prescriptions. Cantharides
were employed for internal uses, long before they were applyed in external

application
them as
to affect by
these parts
and on the
disorders,
discharge of
gonorrhœa of
and in some
violently
their doing
long, and
with the
does effect
experiment
proved fatal
œsophagus
reconstricted
tion of
malus, which
continual
of blood
groin or
they are
stimulate
the act of
dilated
whole

applications; many physicians however, ancient as well as modern, have considered
them as very dangerous & improper for our frame. They have a peculiar tendency
to affect ye. urinary passages, and sometimes occasion discharges of blood from
the parts with great inflamation; a strangury is ye. most common attend-
ant on their exhibition. Hippocrates used them internally in hydropic
disorders; & applied them also to the vagina in pessaries to bring on ye.
discharge of the menses. Dr. Grainger in his edin: med: essays recommends a com-
bination of Cantharides & alcaline salts for the dropsy. They are also sometimes
used in inveterate gleets. Dr. Greenfield who was amongst the first that used
them internally in England commends them highly in ulcers of the kidneys & bladder &
for ye. cure of the Gout & stone; for this purpose he always combined Camphor
with the fly, wh. hath been reckoned an antidote & corrector of it. How far small
doses of Cantharides may be safe & proper can only be determined by repeated
experiments; but it is very certain ye. large doses are very hurtful & have often
proved fatal. We have examples of their producing inflamations in the
oesophagus, stomach & intestines: also bloody urine with great tension
& contraction of ye. penis accompanied wh. a violent strangury. Horatius mentions
an case of a person who took Cantharides, to excite a venereal fu-
mulus, which brought on such an irritation of the parts as produced a
continual erection, wh. swelling & inflamation of the testicles and a discharge
of blood ye. destroyed ye. patient on the eleventh day. — When they are
given in moderate doses they seldom affect the stomach & intestines, tho
they are immediately applied & come in contact wh. these parts; but affect
& stimulate the urinary passages without exerting any great power on
the rest of the system. We can only account for it by ye. being greatly diffused
& diluted in the primæ viæ & whilst they circulate & are mixed wh. the
whole mass of blood; but after they are again collected in the kidneys &

Stick of the
Tor fit in
kidney;
astringency
the urine
chance the
them that
Linen;
an affection
long hair
sometimes
attended with
with their
effects, some
plaged them
this device
of wormed
Stoughton
of considerable
decision the
Lyn cap
the rope
have been
that they
must use
the same
incision the

Neck of the bladder, they produce the functions y. we have just mentioned them.
For if we give them in a very dilute form, they will not even affect y.
kidneys, whereas half a grain in substance will sometimes occasion a
strangury. — But they will not always prove diuretic tho they affect
the urinary passages; and it seems as if they frequently excite more by
chance than design. — In a Nephritis they must be hurtful; for every
thing that stimulates & irritates the parts cannot fail of aggravating the
disease; and as the Irritation of Cantharides will sometimes bring on
inflammation; this would be of the most pernicious consequences in
every kind of nephritic disorder. — They are however for this very reason
sometimes useful in Gleets &c. fluor albus; but they are even in these disorders
attended with very doubtful effects; for we have it not in our power to
excite that particular degree of inflammation that may be attended w. good
effects, w.out producing any bad consequences. — Dr. Mead hath also every
hoped them for the cure of the leprosy, and found them serviceable in
this disease. One case is not however sufficient to establish the usefulness
of a remedy, and I should expect no great effects from them in that disease.
Dr Burton hath also used them for the Rheumatism, when he thought them
of considerable utility. He always combined them w. the bark & Camphor, the
medicines that are extremely well calculated for y. cure of that disease, & which
I am confident produced the effects w. Dr Burton ascribed to the Cantharides.
I have rep. enumerated the real as well as supposed Virtues, & it is easily seen
that they are at best but a precarious remedy. I for my own part would
never use them whilst I could think of any medicine y. would produce
the same or similar effects, w.out incurring the danger & inconveni-
ences that always accompany the internal exhibition of Cantharides —

Millepedes

used them
People in
some opin
symptoms
of Urine.
& learnin
lected 15. a
These Sort
wheathaniel
them adm
tinacies, for
or consider
times prec
ancies, y
If they hav
of the Medic
be used at
are used in
storbes an
in this m
in the ren

Coccinelle

it is of very
people that
every lady a
them in th
Fever. Sen
they are

Millepedes. These have been recommended for various Disorders by Authors: Dioscorides used them as diuretics in ye Dropsy; in Obstructions of ye Viscera & ye Jaundice & Boyle in his natural philosophy tells us they sharpen & clear ye eyesight. May by some experiments it appears that they have been useful in removing ye first symptoms of a cataract. They have likewise been recommended in Suppression of Urine & in calculous complaints. They are even said to dissolve the stone. Laurembergius, who was himself a physician, tells us that he was afflicted wd. a stone in ye bladder, ye was dissolved & expelled by ye use of Millepedes. These Insects seem to contain a Stimulus of ye same undetermined nature wth Cantharides; but they are greatly inferior to them in Virtue. I have known them administered for a considerable length of time in ye Chlorosis & Scrophula, diseases, for which they have been generally recommended; but no certain or considerable effects were perceived to attend ye exhibition. They are also sometimes prescribed in long nervous fevers, but I know not what purpose they answer, ye should induce us to employ so indelicate & disgusting a remedy. If they have any effects on ye body, they are imperceptible; & I have no Idea of a Medicine bringing on any considerable change in the System, when we are at ye same time not conscious of it, or able to perceive it. They are used in substance from ℈ss to ℈ij for a dose; or ye expressed Juice of 500 or 600 animals alived is swallowed down wd. a glass of Wine. Administered in this manner three or four times a day, I can easily account for ye use in the nervous fever, from ye stimulating & cordial quality of ye Wine.

Coccinella This is an Insect of South America & the feed & lives on the Opuntia, it is of very great Importance in ~~dying~~ ye art of dying; but I can not find ye they have any great effects as a Medicine. They have been called diaphoretic & sudorific, very large doses are however required to produce these effects. Dr Lister employed them in the Sphacelus. Dale recommends them as an alexipharmac in Fevers: Lentin to cure Diarrhoea & cure abortions. But the only purpose they answer in Medicine is to give an agreeable colour to our remedies.

Viperas

to other pla
Jail & Bro
from y. c
probably
distance,
answer b
for Viper
& Mead
the probab
ations of
Jacobs of
to a Place
employed
of the Ether
Groundhem
to prevent
y. quantity
Serpent Vo
the Volatil
suspected
Sir Hans
of Viper, c
Island
miles
also been
Sir of Olive
Viper Bro
It afford
in a sel
w

Vipera the Viper, is a native peculiar to Italy, from whence it is exported to other places to answer ye. purposes of Medicine: It is deprived of ye. head Tail & Bowels, & after proper drying put up for use. It hath been employed from ye. earliest ages of physick for ye. cure of various disorders; & this hath probably led people also to make use of the Rattle Snake for ye. same disease, for in wh. the Viper is recommended; & no doubt the one will answer equally well wh. ye. other. The Viper hath been particularly recommended for Disorders in the Skin & hath even been said to cure the Elephantiasis, & Mead saw ye. Leprosy removed by an infusion of Viper in Wine. The powder, Wine & Broth of Viper hath also been recommended in asthma, tions of the Vipera & ye. Sacredica. But notwithstanding these authorities in favour of them, they seem to possess no superior Virtues to entitle them to a place in our shops and prescriptions. Hoffman, who tells us he employed them frequently, wh. an expectation of success, in those diseases of the skin & other complaints for wh. they are particularly advised, always found himself disappointed. — The Volatile Salt of ye. Viper is found to prevent ye. bad effects of ye. bite of this Animal, if it is taken to a quantity of a drachm in some broth. It is however no more than pure Volatile Alkali; & differs neither in Virtues or qualities from the Volatile Salt of Hartshorn or Ammoniac. The fat of Viper hath been supposed to possess peculiar Virtues for removing ye. disorders of the Eyes. Sir Hans Sloanes celebrated Ointment for ye. Eyes is prepared wh. the grease of Vipers, which however answers no ~~other~~ purpose but what any other mild & bland oil or fat would perform equally well — The fat hath also been said to cure ye. bite of ye. Animal, if anointed over ye. Wound: but Oil of Olives will answer equally well; & both sometimes fail of curing it. Viper Broth is recommended as a high restorative & fine nourishment. It affords an aliment with nutriment, and may therefore be of use in a relaxed & weak stomach, but scarce deserves ye. name of Medicine. — What we have thus said of ye. Viper will apply in every respect to ye. Rattlesnake

We have now finished y. consideration of y. particular substances em-
ployed as stimulants, and are next to bestow some attention on a few general
heads of remedies, y. may occasionally be employed & considered as answering
the Indication of stimulants. —

Nutrientia. Whatever adds strength to the solids & increases y. motion of y.
fluids, may be considered as a stimulant. The Nutrientia by adding strength
to y. solids increase their oscillations, and by augmenting y. quantity of y.
circulating fluids, increase the tension. They have also a very considerable
effect ~~by~~ as stimulants by y. immediate action on y. stomach. They are
indicated in the hypochondriac, hysteric & arthritic complaints; & in cases
of languor & debility from fatigues, diseases &c. in all wherever the action
of the heart & arteries is diminished & y. functions are not performed w.
y. vigour necessary to health: & are contraindicated in all symptoms of inflam-
mation & where the action of y. heart & arteries is excited beyond y. natural standard.

Astringents as stimulants: Of the stimulating effects of astringents we treated
amply when we considered the use of these remedies in increased evacua-
tions of every kind, y. I have no room for further observations in this place.

Cathartics as stimulants. These will be considered in our next lecture. —

Acids as stimulants were treated of under y. head of Nutrientia & astringents.

Shells as stimulants: These are very considerable stimulants to y. animal
fibres; but we shall have an occasion to treat of them fully in another place.

Neutral Salts have both a sedative & stimulating quality; but are very seldom
employed in the intention of acting as stimulants on y. system. —

I shall conclude this subject w. an observation I made before: That however
stimulating med. may be highly useful & necessary for particular occasions &
to produce sudden effects; yet should not persist too long in y. use of them; for
they shortly become habitual to y. system producing little or no effect unless y.
doses are considerably increased from time to time, in which case they will
destroy the tone of y. fibres, & lay y. foundation for an irremeable train of evils.

Notation

the force

find the

principle

every thing

operation.

on our fo

of operatio

tion of the

not by clai

customers

particular

we will p

numerous

individuals

made of o

opinions,

to contra

sometimes

add to any

uncertainty

medicines

ained of

principles,

Plato, who

some again

in the fir

of plato in

in in a cer

Sedatives are such substances as diminish the motions of y. System & the force of y. moving power. In Doctor Cullens Materia Medica you will find the operation of these Medicines explained on the mechanical principles, & therefore refer you to that treatise, where you will find every thing that can be said on y. subject. I shall not treat of y. particular Ration. There are no doubt many substances in Nature y. act as sedatives on our constitution, & in all probability differ very much in y. mode of operation; we are however only acquainted with a few, and y. peculiarities of these we shall mention under each particular substance. The first y. claims our attention is Opium, which is one of y. most important substances of y. M. M. It is a medicine of such efficacy & power, y. it deserves particular attention, ~~and~~ I shall therefore treat of it as fully as ~~y.~~ our time will permit: point out its advantages & y. disadvantages attending its use. Numerous almost are the Authors who with great ingenuity & uncommon industry have endeavoured to discover the effects of opium & explain its mode of operation. Hence it hath happened that we have almost as many opinions, as there are Writers on y. subject, and these often frequently so contradictory, that we might almost be led to imagine, Physicians sometimes write on a subject more to shew their ingenuity than to add any real discoveries & facts to the stock of Medicine. — The ancients & some of the more modern Writers, attributed the effects of most medicines to a cooling & heating quality, from y. opinion they entertained of diff.t temperaments; and the greater part of y. Ancients as Dioscorides, Galen &c contended that opium acted by refrigeration; whilst Later, Wedelius and others assert that it is to be of a heating nature. Some again combined both these properties & attributed to opium a heating quality in the first, but a cooling nature of y. second. Others again dispute about y. path in which its virtues recide: whilst Hoffman, Willis & others place it in a certain narcotic sulphurous quality, Pitcorne & his followers

ribe it to a certain volatile alkaline salt. It is sufficient barely to men-
tion opinions which are now universally exploded, so that few and under
no necessity to adduce arguments to refute them. But we are to
consider two other opinions which prevail very universally w.ch respect
ye action of opium & these deserve our more particular attention
The first regards ye part of ye animal body on which opium produces its
immediate effects: whether it acts on ye blood, rarifies it & encreases its
bulk, & thus by ~~affecting~~ in consequence of this rarifaction affects ye brain &
nerves, by which it ~~produces~~ effects and produces; or whether it acts immediately
on the Nerves, without bringing about any previous change in ye blood. This
opinion hath engaged the attention of the most celebrated phy sicians &
philosophers, Alston, Whytt & others contend for the latter theory; Thomson
Hoffman, Friend, Haller w.th many others are as opinionated in defending
the former. The other question ~~relating~~ relative to ye effects of opium, is, whether
this medicine excites ye action of ye heart & arteries & encreases ye animal
heat; or whether it diminishes ye action of ye vascular system at ye
same time that it checks both ye voluntary & involuntary motions. The
former opinion is embraced by Thomson, Haller & Fuller, the latter by Hoffman
Jones, Alston & Whytt &c. Haller hath collected all ye arguments of ye first
opinion in one book on the Virtues & uses of Opium, as his Words therefore
comprehend all ye arguments of the other Writers in favour of ye action of
Opium being immediately on ye blood, we shall first consider his reasons
ing on this subject. He does not deny but what Opium may at times
in particular instances affect the Nerves principally; yet he strongly
contends ye in general it acts first on ye blood which it rarifies, attenu-
ates & thus encreases its bulk; which effects he ascribes to a certain subtile
volatile and rarifying principle of ye Opium, & confirms his opinion by
the very subtile & refined reasoning, at ye same time justifying the ac-

unity of many very eminent physicians who entertained the same theory.
However we consider what a small quantity of opium is taken at a dose,
that even the smaller part of ye quantity is ye active part of the Opium
we may draw an argument against this opinion. The celebrated Chemist Neu
mann instituted many expts to discover the real Virtues of Opium, and
analyzed it by various methods to discover ascertain ye particular part &
quantity containing ye sedative effects; by them he found that in a pound
of crude opium there were only three drachms worth of any considerable
sedative quality. From whence we conclude that so small a share of
a single grain of opium, y^t is commonly taken for one dose, can produce no
effects by it rarifying and increasing the whole mass of blood, which
in a full grown person is supposed to amount to thirty pounds. Van
Swieten also observes: that a grain or two of opium taken into the stomach,
not on acct of its resinous viscosity not easily soluble & remains long in
that organ, komposing at least all sensation of pain for eight hours, &
that is very strange, the following morning ye pill of opium is perhaps
ejected by Vomiting in an undissolved state; where it does not appear to
be by being dissolved & mixed w^t the blood & humours & by ye circulation
carried to the brain; but by being fixed & applied to the exterior surface
of ye stomach, brings about some change in the Nerves there, which
for a time at least blunts ye sensation of pain in ye brain & Nerves.
But independant of the small quantity of opium taken at a time
not being capable of rarifying the blood; these and other arguments if possible
still stronger & more considering. For if one grain of opium could bring
on a rarefaction of ye humours & that increasing third bulk so as to become
viscous & perceptible; to what an amazing bulk must not 2 or 3 drachms tax
then in one day encrease the blood! For tho by the constant use of any
one remedy its power on the moving fibre of our bodies is much lessened; yet

custom or
the moves
certainty of
cacon be
let by
ate the
ts by
ments
have th
who lik
thinner
llowing
lity or
it does
proves
gens
ter them
either ag
will render
ity is
a addet
ed by ap
this so in
stated
appear th
the

custom or habit cannot have any ~~effects~~ proper in changing the effects upon the blood humours; but there will ~~appear~~ always appear in proportion to the quantity of ye substance employed. We may from the same paucity of reason beget ~~the~~ ~~opinion~~ ~~[illegible]~~ entertained of opium produces its effect by bringing ~~on~~ about some change in the blood, ~~which~~ and among others refute the opinion of the learned Dr Haller, who fancies that opium acts by rendering the blood more viscid. The favourers of ye opinion endeavour for ye action of opium from its effects on the blood, also endeavour to prove their assertions by experiment: and ~~they~~ assure us that the blood of the persons killed in battle who were accustomed to a free use of opium, is much thinner & more fluid than ye blood of those not accustomed to this drug. Allowing the observation to be just & without we enquiring into ye possibility or probability of determining an affair of so ambiguous a nature, it does still not follow that opium attenuates or dissolves the blood: it proves indeed that along continued use of opium may debilitate ye organs ye serve for digestion & chylification to such a degree, as to render them unfit for the performing of their functions. It is also further asserted that opium mixed with blood recently drawn from ye body, will render it brighter & thinner: some again assert that ye specific gravity is diminished by one half, if a few drops of a solution of opium be added to it: this however is a false hypothesis, never to be supported by experiments. —

This opinion however is still further ~~confuted~~ refuted, by absolute experiments made, & refuted by the late Dr Whytt and Dr Monro of Edinburgh: by these it appears that opium acts principally, tho in a manner unknown to us, on the brain, the medulla spinalis, & the whole nervous system:

the following
boy, which
exhibited
nor was
the time
of its heat
into the
it was re
he brought
most forcibly
below the
the force
different
which
the effect
brought
of pressure
sympathetic
not indeed
of Mr. Robe
opinion, a
Heat, the
power of
the heat
manner

following experiment places this matter beyond all manner of doubt. A
frog which had been deprived of its heart for an hour still moved its
limbs & changed the position of its body; it even continued to hop about,
nor was it altogether lifeless till two hours and a half had expired from
the time ye heart was cut out. Into another which had been deprived
of its heart about five minutes & which ~~had~~ injected a solution of opium
into the stomach & intestines, and ~~after~~ when only half an hour had elapsed
it was altogether lifeless: nor could the muscles or any of ye muscular parts
be brought or excited to action or even contraction by ye application of ye
most powerful stimulants. As the frog had been deprived of its heart
before the opium was injected, it cannot surely be even supposed ye
the opium ~~produced any effects~~ could ever enter ye circulation & be carried to
different parts of ye body by which a communication of ye fluids could ensue,
which ~~proved~~ occasioned ye death of ye animal; ~~but~~ on the contrary
the effect was altogether ye consequence of ye change which ye opium
brought on ye nerves to which it was immediately applied. Drs Monro's experiments
however appear that ye opium may sometimes be absorbed by the
lymphatic vessels, and in consequence of this absorption produce its effects;
not indeed by ravifying the blood, but rather by diminishing the sensation
of ye nerves in ye heart & arteries. For as soon as a drop of ye solution of
opium, which had been injected into ye vena cava of a frog had reached the
heart; this organ was so debilitated ye it had not any further the
power of propelling the blood: and even the parts at a distance from
the heart were by a certain consent or sympathy affected in the same
manner & rendered in a manner equally paralytic

The heav
after it
opinion
doc may
dat on,
but the
independ
tutis also
affirm by
by mean
pendent
answer
applyed
opinion
to you
affirm,
necessity
from y.
of y. a
We hav
Almighty,
ordained
human
to y. ob
consequen
hinder

the heart of a frog will continue in motion & beat for a considerable time
after it is ~~sep~~ cut out & seperated from y. body: but Dr Whytt observed that
opium would quickly destroy its mobility. From this & y. former experiments
we may w. certainty conclude that opium does not only ~~produce its~~
effect on the Nerves of our body, w. out immediately affecting the humours,
but that it also constantly affects the Nerves to which it is applyed
independent of any action on y. brain or sensorium commune. Dr Monro
hath also further demonstrated that the Brain & whole nervous system is
affected by opium, either from its being absorbed by y. lymphatick vessels &
mixed with y. circulation carried to y. different parts of y. body; or, independent
of any absorption, by y. consent or sympathy of y. brain & whole
nervous system w. the parts to which y. opium hath been immediately
applyed. But tho I have thus endeavoured to prove that ~~opium~~ principal action
of opium is on the nervous system; I must at y. same time observe
to you that y. different humours of our body may be considerably
affected, from its action on the organs of sense & motion. And I shall
hereafter endeavour to prove, that this secondary effect on y. humours,
from y. previous action on y. nerves, hath given rise to y. opinion
of y. action of opium being chiefly occasioned by y. rarefaction of y. blood.
We have now from y. ~~observation~~ physiological experiments of y. Monro
& Whytt, and the pathological observations of Van Swieten & other very
eminent physicians, found, that opium produces its effects altogether on the
human body, ~~altogether~~ by its action on the Nerves: We therefore go on
to y. consideration of the other question, which is indeed of greater
consequence in physick: Whether Opium excites the action of the
heart & arteries: ~~& whether~~ increases y. animal heat, or whether it is attended
w. contrary effects ——

smaller &c
given in
of heat &c
culation
will actu-
ally bene
otherwise be
destroyed
still ope-
minishe
the circu
cate of
natural fo
being ne
of
predestinat
may pro
Nothing
be affir
so great
as equal
of mo
itself, wi
the pro
the same
It is ne

Haller & many very celebrated Physicians entertain the opinion, y. Opium when
given in y. usual doses y. we order in diseases, always renders y. pulsation of
heart & arteries more frequent; & that it therefore quickens & excites the cir-
culation of y. fluids. Haller not only asserts y. opium given in small quantities
will accelerate the pulse, but also says y. there never was an Instance of
Dog being killed by any quantity whatever of this Drug; and from this circum-
stance infers that neither the irritability nor motion of y. heart can be
destroyed, tho we should give Opium in ever so large a quantity. On
y. other Hand Whytt & others are of opinion that opium always di-
minishes the action of y. heart & arteries & never fails to retard & check
y. circulation of y. blood: unless in those cases of Lassitude & Apoplexy y. indi-
cate y. use of opium & in which the pulse is beyond below the na-
tural standard; but rises on the uneasy sensations & y. cause of y. disorder
being removed. If y. action of y. heart & motion of y. blood is owing to the
irritability & sensibility of y. heart & arteries, which it undoubtedly is, we
may from theory almost conclude, that y. pulse must become slow & moderate from
taking of opium; for how is it possible that y. heart & arteries should not
be affected by y. action of opium, which all y. other motions of y. body are
so greatly affected by it. The peristaltic motion of y. stomach and intestines
is analogous to the motion of y. heart: Both of them are ranked amongst
y. Involuntary functions, are occasioned by a stimulus, continue during
sleep, when all other motions cease & will act for some time after
y. parts are separated from y. body. Lastly, they received their nerves from
y. same origin. But y. peristaltic motion is very readily & very considerably affected by opium
& is rendered slower. We can therefore scarce doubt but what the heart

must necessarily be affected in the same manner. We must however allow y. as
y. effects of opium are not so easily extended to y heart, as they are com-
municated to the intestines, and also on acct. of an inherent irritability in
the heart, which was wisely contrived to subject this noble & vital
organ less to accidents of every kind, they are not readily perceptible, nor
are they so soon obvious as in y. Intestines. It moreover appears from
Dr Whytt's experiments that y. motion of y. heart in a frog was much sooner
destroyed by opium being injected into y. stomach & intestines, than by
lacerating or even altogether separating from y. body the brain & medulla
spinalis. And Monro demonstrated by y. experiment which I quoted above,
that if opium is applied to the external surface of y. heart, it deeis
deprived of sensation and motion. From this as well as many other experi-
ments instituted by Monro, Whytt, Shaw, Boerhaave & Alston, it is placed beyond all
manner of doubt, that y. action of opium extends both to y. heart & arteries; &
if given at least in large quantities it not only diminishes but wn deprives them
of Generation & motion. However Haller in order to confirm his opinion
quotes the testimony of many great physicians, to which he at length adds
his own in the following terms. I have always, says he, observed whenever it was
necessary to give opium to moderate y. too great discharges by stool or other
evacuations, y. 13. were attended with a low & weak pulse, that the pulse became
both stronger & quicker. I therefore repeat it, at y. same time appealing
to experience, that opium in its first operation always quickens y. pulse,
altho at y. close of its action, or if the dose be too great so as wn to
threaten death, it always happens that instead of y. pulse being quickened
it becomes very slow & weak ——

There is
failed
Spirit
it lets
guished
is not
it is
tory
frequent
when
our rep
Wheder
others it
honor
yet it
the pub
w. re
Good
Ord
sentiment
Spirit
be con
quality
strict
mutation

There is indeed nothing more true than ye. opium will quicken & raise the pulse in particular disorders, especially in pains & anxiety of ye. stomach & intestines, in flatulencies & colics, when ye. pulse is extremely low & weak: it likewise restores ye. ~~heat~~ proper degree of heat, when it is almost extinguished by vomiting & convulsions: which is very easily accounted for. It is not at all upon ye. principle wd. Fraller assigns for it when he says it is owing to ye. stimulus communicated ~~to~~ to ye. heart & arteries; on ye. contrary these effects are produced from ye. pain & anxiety being removed, which frequently occasion the greatest languor & debility in ye. vascular system. When we are to enquire into ye. real virtues & effects of a Medicine our experiments should be made on ye. healthy body, if possible, for a Medicine may in particular diseases act as a stimulant, whilst in others it proves sedative. The following instance will illustrate this. Every person must allow ye. Wine & all spirituous liquors are stimulating to our systems, yet it often happens ye. in particular cases they prove sedative. I have known the pulse on acquisition of ye. Gout ~~rise~~ rise from 80 to 120 strokes in a minute, wd. excruciating torments; but on taking ~~a glass~~ Wine liberally, by wd. ye. Gout was again forced to ye extremities, ye. pulse sunk to its natural standard, & ye. pain was greatly alleviated: In this case then the Wine proved a sedative, in consequence of its acting as a stimulant. In the like manner Opium may in particular instances prove a stimulant; it would however be wrong from thence to conclude, that it was possessed of any stimulating quality. On the contrary it very universally, unless in disease when it takes off pain & uneasy sensations, renders the pulse slower, causes an easy relaxation in the larger vessels, & ~~renders~~ leaves the body most sensible & receptive

table.

We might with equal propriety say y. Opium is a cathartic, y. quality
of all others most opposite to its real Virtues, from observing sometimes in
particular habits & diseases that it proves purgative. Dr Jones in his
treatise on opium takes notice y. after y. anodyne effects of opium
are passed of the patients frequently are urged ~~both~~ to evacuations both
of urine & stool; tho before they took y. opium their body was regular; &
this happened particularly to those who ~~were~~ had been for some time
accustomed to take opium. It probably acts here by leaving y. Intestines
& body more irritable & therefore more sensible to the stimulus from the
feces: in ~~other cases~~ diseases of y. bowels, where a costiveness is occasioned
by spasmodic constrictions in y. Intestines, opium by taking off y.
constriction, frequently occasions the ~~desired~~ evacuation by stool. — I remember
a case of ~~a woman~~ person who accustomed himself to the use of opium, to
alleviate spasmodic symptoms in y. system; ~~who~~ and upon the disorder
being mitigated abstained from the use of this medicine, but was immediately
affected with a very obstinate costiveness, y. was not to be removed but
by his returning to y. use of opium. Whilst he continued in its use
his body also continued regular; but on laying it aside he was
again affected with ~~costiveness~~. In this case the irritability of the
Intestines & system in general was probably increased by the ~~use~~ opium,
which occasioned this unusual phenomenon. — If it be to this cause,
and irritability & y. accumulation of y. Fluids in y. larger Vessels y. most
of y. bad effects of opium are to be attributed in inflammations accom-
panied w. topical pain. For if we give opium in an inflammatory rheuma-
tism, we can generally alleviate y. pain, whilst y. effects of opium continue,
~~but if the~~ but they return w. more violence after the opium has ceased
operating: whereas if it stimulated y. heart & arteries, it must necessarily en-

cause, instead of alleviating the pain, but by leaving the body more free,
the, after its operation hath ceased, is much more apt to encrease y. sensations of pain.
Another effect of opium, by which we judge it cannot encrease y. heat of y.
system is, that it relaxes & debilitates the solids, by which it diminishes
their oscillatory motions, & thus must ~~encrease~~ lessen the heat of y. body;
for it is observed that y. heat of y. body depends much on the elasticity & strength of the solids. Van Swieten even tells us that
Varnotch may be sometimes given with safety to moderate y. heat in fevers.
And the dexterous Sydenham recommends it, to use his own terms, in
the most obstinate stage of the small pox, against the too great inflamation
of y. blood, & excess of y. animal spirits; and orders it to be given in large
doses, even in young persons of a sanguineous temperament. Huxham
prescribes it in a pleurisy. Why lately Dr. Stoch recommends it as one of
the safest & most efficacious medicines in acute fevers, provided it be
administered with judgment & prudence. Dr. Collin of Vienna also recommends
it for y. same disorders, & more particularly in y. pleurisy & peripneumony.
From these instances, & y. testimonys of such eminent practitioners in
physick, it is at least certain that it cannot encrease the heat & fever
in those diseases; ~~such~~ for in that case it ~~could~~ must have a fatal
tendency. How far, however it may be proper in those disorders, & at
what particular ~~time~~ stages it may be administered w. a prospect of success,
we shall have an opportunity of treating more particularly in our next
lecture — To the arguments already given to refute y. opinion of
opium encreasing the action of y. heart & arteries & thus augmenting y. nat
heat of y. body, we shall add an infallible experiment. It hath been observed
that only Thermometer being applied to y. body of a person under y. effects of
an opiate, instead of y. Mercury's rising above the standard of y. nat heat of y.
system, it rather fell below the natural degree of y. constitution

*: and probably also from its being applied to ye. nerves of the stomach which are contiguous to & in some measure connected to. the nerves that go to ye. lower extremities

In my last lecture I considered the different opinions ye were entertained by physi-
cians on ye operation of opium: we are in the next place to enquire into
the effects it produces on our body & after that that of its uses in
medicine. Most persons on taking of opium become cheerful; ye pulsations
of ye heart & arteries are slower and ~~yet~~ commonly fuller; the heat of ye body
is rather diminished; the perspiration is increased: the body is rendered stiff;
sometimes it occasions a suppression of urine; the respiration becomes slower:
the blood vessels, particularly ye veins, turnify; there is a sense of fulness &
heaviness about ye head & breast: it alleviates pain; solves spasms, refreshes ye
body & disposes it to sleep. These are ye most common effects of opium; we are
therefore next to enquire how it produces these effects or rather to account
for its operation in ~~these~~ cases bringing on these particular symptoms.
We are however previously to take notice, that its general effects may be ex-
plicitly accounted for, from its diminishing ye sensibility & irritability of every
part of our body without exception, and this in proportion as ye parts
are distant from ye sensorium commune; as they are of more or less sensible
irritable & lastly as the effects of opium and cancer are applied & extended to ye
Daily experience teaches us that these considerations have a considerable share
in influencing ye operation of opium. Therefore the inferior extremities, as they
are at ye greatest distance from ye sensorium commune, are easier affected
by opium than the superior parts of ye body: the heart, on account of its
very great irritability & ye constant stimulus it is subject to from ye blood,
is less affected by this medicine than any other part whatever: whilst ye
stomach & intestines, to which it is applied & consequently comes in immediate contact
are also most evidently affected by it. — We are now to account for its
particular operation: we cited in ye 1st place that it rendered the mind serene
& cheerful. It appears to produce this effect by taking off all disagreeable
sensations; hence the Turks & other eastern nations, who take it second dose

of opium, untill ye effects of ye first are gone off & they feel languid, sad & are troubled w. great anxiety. For a continued use of opium always depresses the spirits; which a repeated dose of opium always contents by raising & exciting. This is probably occasioned by ye sedative quality of ye opium by which the anxiety is relieved, & the mind becomes more chearful. Sometimes it happens that a person, not accustomed to taking of opium upon swallowing a dose of it, is affected w. the greatest chearfulness & does not seem to be at all tendered drowsy & sleepy by it. This is not however a common fact in this country, & for one that is kept awake by it, a hundred are killed to sleep: In this case the phenomenon seems to be owing to ye particular habit & constitution of ye patient, and cannot be ascribed to ye opium. In like manner we sometimes observe Laudanum instead of exciting a vomiting, will in particular constitutions, dispose to it & excite a Diarrhea. These are Instances when a pill of opium newly made gave the patient very great inconvenience; but after it had lain by it for 3 or 4 weeks, it was not attended w. any. Huxham informs us of Instances where ye phenomena were greatly relieved by decoction, which could not by any means bear crude opium. Geoffroy again hath examples of persons who always were composed to a refreshing sleep by a battery in fusion of opium; but whom a spirituous tincture drove almost to madness. Willis mentions some persons also in whom it brought on a total oblivion; which in others it seemed to sharpen the understanding & render them more fit for business. These are however but rare effects of opium; such however as ought to be known by a physician; who may then be prepared & on his guard against accidents of ye kind; & when they do happen not be at a loss to ascribe them to ye proper & real cause. All our reasonings

ning to account for these Phenomena is vain & we will be to no purpose
left we ~~and~~ remain in ye dark with respect to ye connexion y^t there is be-
tween ye mind & ye body, & ye mutual effects they have on each other: it is there-
fore better to acknowledge our ignorance at once, than to indent refined
theory & hypothesis, y^t only serve to puzzle, & not illustrate ye subject.
Indeed often, on observing that variety in ye constitutions of persons, & y^e
different manner in which various persons are apt to be affected by it, has
left us this caution with regard to the exhibition of it, and as it may
often be necessary to observe it, I shall give it to you in his words: If a
physician is unacquainted wth ye peculiar Idiosyncrasies of his patient w^th
respect to this remedy, he had better dissolve a few grains of it in some
proper vehicle, & order a small quantity to be taken frequently, y^t he
may have an opportunity of observing whether it is likely to be attended
with good or bad consequences, and whether our intention is answered by it.
I shall however take notice of one circumstance y^t frequently attends our
giving opium in small but repeated doses, & this is, that if ye intervals be
when each dose are too long, our Indication will never be so perfectly an-
swered, as by giving a sufficient quantity at once, or at least, within a
short time. I have known it to be ye case sometimes, when physicians
instead of giving a large dose at a time, ordered small but repeated quan-
tities of it, so as in ye end to give much more than would have been
necessary had a sufficient dose been given at ~~a time~~ once, without producing
the effects intended, wch would have been ye consequence of a full dose.
Nor should we ever confine ourselves to a particular quantity of this me-
dicine: and tho a grain is in general a sufficient dose, yet when the pain
is violent & ye irritation great, this quantity will have little or no effect,
& a much greater is necessary, wch can only be determined by ye judgment of ye phy-

physician, who can only be determined by circumstances. A more
effect of opium is to give fortitude to suffer pain & encounter danger, wh.
now seems to be more owing to ye. sense of danger or pain being diminis-
hed, than to real fortitude. It is with this intention that ye. Turks gene-
rally take opium before a battle or any exploit attended w. danger. For
the same reason Sanchorten & many others prescribe a dose of opium to
persons, who are to undergo an operation in Surgery; not indeed w. ye. pro-
perty to dull the sensations of ye. patient in such a manner, as that he shall
feel no pain, for it would then be necessary to give it in such a quantity
as to make it highly dangerous to ye. patient, but only that ye. fear & dread
of ye. operation may at least be diminished, if not altogether removed.
We are next to enquire how ye. pulsations of ye. heart & arteries are rendered slow,
& ye. pulse fuller. As the quickness of ye. pulse is owing to the sensibility
& irritability of ye. heart & arteries, whatever diminishes these, must necessa-
rily render ye. pulse slower. We are however to observe that ye. motion
of ye. heart is not so weakened equally w. ye. other muscular parts;
which, as was before said, is in a great measure owing to ye. great sen-
sibility & irritability of ye. heart; to which we add ye. constant stimulus
arising from ye. blood transmitted to it; and we may perhaps also add
the habit of ye. heart alternately contracting & dilating itself. Those
who are for explaining ye. effects of opium from ye. coagulation of the blood
& consequent compression of ye. brain, endeavour to account for it in a
manner altogether different from what has been just now alledged. They
say that ye. Nerves of the heart have their origin in the Cerebellum; &
that that part of ye. brain, on account of its situation, cannot so readily
be compressed ~~or the Cerebrum~~ by ye. varified blood, as ye. Cerebrum; Therefore
the nerves which have their origin in ye. Cerebellum are not so liable to
be affected by ye. opium as the others, and ye. heart is ~~not~~ less acted upon.
But they are wrong in every respect, for in ye. first place we have
already shewn that the blood is not varified by ye. opium, and

Secondly Dr Haller hath very clearly demonstrated that the Nerves w.h are
distributed to the Organs performing the Vital & animal functions take
rise from the same origin, which sufficiently refutes the ancient opinion of
the Nerves of y.e Vital organs originating in y.e Cerebellum & Medulla
Spinalis only in y.e heart, but in every other part of y.e System y.e action of y.e opium
is greatly influenced by irritations from particular Stimuli. They in the intestines
at the same time y.e we give y.e opium we administer a purge, w.h is a continued stimulus upon y.e
intestines the peristaltic motion will continue its action & the purgative produce its effects
to every other part of y.e system is affected by y.e sedative quality of y.e opium.
Fulness of y.e pulse is partly owing to y.e relaxation of y.e Vessels; and partly to y.e
accumulation of y.e blood in y.e larger Vessels. By y.e experiments of Dr. Alston
appears that y.e circulation is sooner checked by y.e medicine in the small than
the larger Vessels; probably from y.e distance of y.e Heart & pericardium commence; where
power are considerably diminished; whence an accumulation in y.e larger
Vessels takes place, & y.e pulse necessarily becomes fuller. We endeavoured
above to demonstrate that it diminishes the animal heat; at least that this
is not increased by it. To the arguments then adduced we may add, that y.e heat
of our body is very much connected w.h the circulation of y.e blood, if it does not
depend altogether or in a great measure on y.e motion of the fluids; for we
generally observe that as y.e circulation increases in quickness & violence, y.e
heat is in proportion augmented. Therefore if the action of y.e heart & arteries
be diminished, & y.e circulation moderated, y.e heat must necessarily become less.
We also said that it checks y.e secretions, except y.e perspiration, which increases
by the stimulus of y.e heated fluids of a thinner consistence, and the mouth
and palate become dry & a disagreeable taste. The various sensations of y.e body
appear in a great measure to arise from y.e action of y.e minute sensitive
nerves, which are stimulated thereto by the fluids y.e are to be secreted.
Therefore when these Vessels are relaxed by the opium, & are deprived of
their natural irritability, the quantity in the secretory organs must be
lessened; in the same manner as during sleep these secretions are likewise

diminished; whilst in both instances the perspiration is encreased, & even a sweat excited. The insensible perspiration appear to be more immediately owing to ye circulation of ye blood, than to the irritability of that organ. For by exciting ye action of ye heart & arteries, no other secretion but that of sweating is promoted. Thus by exercise the perspiration is encreased, whilst the urine is diminished. And therefore when the superficies of ye body is relaxed in a greater degree than the action of ye heart is lessened it of course follows ye the perspiration must be encreased. For if the resistance to ye motion of ye blood is taken off, we accomplish the same end, as if the motion itself were ~~encreased~~ augmented. This is further confirmed by what we observe in a sweat breaking out during sleep, from fear & from fainting. In all these instances there is an evident relaxation of the extreme vessels on ye skin, which also the force of ye heart & arteries is diminished. Hence the foundation of Hippocrates's aphorism when he says, that those of a dry & hard skin die without a sweat; whilst those of a lax & tender skin go off in a sweat. — Besides the quiet & composed state of ye person also contribute in some degree to encrease the perspiration, for ~~Sanctorius~~ observes in one of his Aphorisms, that rest contributes so much to a free perspiration, as a cheerful & composed mind. We see how much quiet is necessary towards promoting a sweat, by observing how seldom restless patients, who are continually tossing from one side of ye bed to ye other, ~~are~~ can be brought to a copious perspiration. Therefore in fevers, when our patients are restless & we decire to encourage a sweat, we can not do this more effectually than by ordering them to drink plentifully of warm diluting liquids, and at ye same time give them an anodyne to compose them to rest. By ye agitation of ye humours being delayed, owing to ye irritability of ye organs of secretion being diminished, ye more fluid parts of ye secreted humours are absorbed, and the remaining part is rendered of a thicker consistence. ~~For~~ It is on this principle that opium is proper

useful in flatulent & other severe deflexions, in which ye. secreted fluids are
so thin, on acc. of ye. great increased sensibility of the tubuli urinifer for
secretion; by which they humours are also rendered more acrid & stimulate
the tubuli, to a more copious secretion. For the reason opium is sometimes
necessary in Pleurisy & peripneumonies, when a thin acrid mucus is apt
to collect which constantly irritates ye. glands in the trachea & bronchia, by wh.
ye. patient is afflicted & worried out w. an incessant cough. By giving an opiate
at night, after the inflamatory symptoms have been specifically mitigated or removed
the irritation & extreme sensibility are diminished; the mucus remains in ye.
follicles where it acquires a proper degree of mildness & consistence, & is after-
wards very easily brought up by a proper expectoration. The dryness of ye. mouth
palate w. ye. thirst accompanying them are owing to ye. secretion of ye. saliva & mucus
being diminished: & by their stagnation & then tending to putrefaction, ye. disagreeable
taste in ye. mouth is produced, ye. generally comes on about ye. end of ye. operation
of ye. opium. It also renders ye. body costive. The body is kept regular in a
healthy person by the stimulus of ye. bile & contents of ye. bowels. But by ye. opium ye. intestines
being rendered less sensible to ye. usual irritation from the bile & faces, ye.
peristaltic motion is diminished, ye. faces are not pushed forwards: the more
fluid parts are absorbed & they become hard: which is almost a constant
disadvantage attending ye. use of opium, unless it be guarded against by
a gentle cavative injection or other method. — If opium is taken immediately after
ye. person hath had a stool, the faces or ye. next motion are of a whitish or ash
colour, from which it appears as if they were not mixed w. usual quantity of bile.
Hence we may judge that ye. secretion of the bile, is like all the other, diminished.
And this consideration seems to point out its use in the Cholera and other
disorders owing to a redundancy of ye. bile: when besides lessening the sensation
of pain, it will lessen the secretion of the bile, which in these cases
appear to be the immediate cause of the disease; and therefore ye.
lessening or suspending for a time ye. secretion & of course excretion of
this fluid, may contribute considerably to relieve & at last remove ye. disease.—

Sometimes the Opium also brings on a temporary suppression of urine, by diminishing ye irritability of the neck of ye bladder, by which this is rendered insensible to the stimulus from the Urine: whence there ensues a dilatation of the bladder, which, even after the operation of the opium hath ceased, sometimes so debilitated as to be unable to evacuate the Urine. This symptom is generally relieved by warm fomentations, or by cold suddenly applied to the region of ye bladder or to any sensible part of ye body.

It is also said that it rendered the respiration less frequent. A slow respiration is occasioned when the ~~Lungs are in such a state~~ irritability of the Lungs is diminished & they are not sensible to the stimulus from ye blood circulating through them. Hence there is a slow respiration in all soporose diseases, as in the Apoplexy, Lethargy &c. The same effect is also produced by opium; tho Fuller asserts that ye respiration becomes more frequent from this Medicine; which indeed would necessarily be ye consequence if the circulation were quickened — I have however always observed the respiration slower from an anodyne, which is further confirmed by the testimony of most practitioners. It is also remarkable that all the cases cited by Fuller to prove the respiration quickened by opium were such ~~as~~ in which too large a quantity of ye opium had been given, when the symptoms came on towards the end of ye operation. Opium we likewise observed, ~~rendered~~ distended the blood vessels, particularly the veins, ~~fuller~~ with a sense of fulness and constriction about the head & breast. When the sensibility & irritability of the smaller vessels is diminished, the motion of ye blood, which in a great measure depends on this irritability, is diminished, whence there is necessarily an accumulation in the larger vessels, by which they occupy a larger space. Hitherto we may also refer the experiment made by the late Dr Monro, by which he shewed that the blood hath a certain degree of elasticity, owing to ye air mixed with it. Hence it always endeavours to expand, which however is counteracted by ye muscular power of ye blood vessels, who contract in proportion to the stimulus ye dilates them, & thus confine the blood within proper bounds. But as the muscular power is particularly weakened by opium & the vessels are relaxed, the blood hath an opportunity of rarefying

to the cutaneous Vessels & distending them. But the principal cause of this distension is to be placed in the slow respiration. For as Dr Haller has shewn by experiments, during expiration, the Veins, upon the blood being thrown ~~out of~~ from the heart, are distended, become blue & cylindrical; but on inspiration, they are emptied, turn pale & appear almost without blood; therefore if the respiration is increased, there alternate repletion & evacuation must also occur oftener but in a less degree. On the contrary when ye expiration becomes slow, there is time given during ye expiration for the blood to be accumulated in the Veins, by wch they are distended; which gives occasion to the sensation of fulness about the head & breast; as being the parts in which it is most perceptible than in any other: not as Haller says because the blood is by ye opium determined to the head; but as these parts are nearer the lungs and always more affected in difficult ~~respir~~ obstructed respiration than ye parts at a distance. The Veins in the head have also fewer Valves & being larger may contain a greater quantity of blood, than ye Veins of other parts: Hence ye regurgitation of blood which Haller ob, serves ~~that~~ takes place during expiration, is also more conspicuous in them. The Sensibility & expression of ye countenance is another reason, for even ye slight est changes may be perceived more quickly in ye face than any other part; wherefore we take notice & observe a distension & fulness in ye face, occasioned by opium, which is not visible any where else. The plethora & redness of the skin is occasioned by red blood entering ye Vessels usually containing Opium. But even after ye operation of opium is over, the patient frequently perceive a difficulty of breathing, anxiety & uneasy sensation for a continued space of one or 2 days, or even longer, where a large quantity of opium has been taken ~~at a time~~ at once. During the whole time there is a quantity of viscid mucus collected up, which as the oppression goes off, comes away more in small lumps and at length resembles flaus. This difficulty of breathing appears to be owing to obstructions formed in ye lungs, by the mucus, during ye operation of the opium, being collected in the follicles, where it stagnates, while the more fluid parts are absorbed, which ye remainder is rendered more viscid & tough — At first, on acct. of its tenacity, it

* This I had an opportunity of observing in a Lad many years ago, who had been tomahawked & scalped by the Indians, but afterwards recovered, tho very unexpectedly. – He had lost a considerable part of ye. cranium, so ye. the dura mater was left bare; by pressing this part with ye. hand, he immediately fell into the Sleep, which was either heavier or lighter, according to ye. degree of compression applied to the brain

is coughed up with more difficulty; but by stagnating the mucus is converted into something like pus, that is easily expectorated, the lungs are freed from y. irritation & y. oppression is relieved — The bad effects of opium in the pleurisy & other diseases of y. breast are produced in a similar manner, when this medicine is injudiciously & rashly administered, before y. obstruction in y. lungs hath been resolved. — It is therefore sometimes useful to combine squills w. y. opium, whence intend to relieve the cough & pain in the breast without at the same time endangering y. suppression of y. expectoration. —

It alleviates pain, solves spasms, & refreshes the body when fatigued w. exercise & labour. These effects are produced by y. power which opium hath of diminishing y. sensibility & irritability; and hence taking off pain & fatigue & relaxing spasms.

It occasions sleep by debilitating or relaxing y. organs of sense & motion; by taking off all sensation of pain by y. irritability, by diminishing all impressions on the mind either from external objects, or internal affections, & by rendering y. mind itself quiet, tranquil & composed. Hence the mind, being in a manner deserted by y. senses, & not receiving any further impressions to keep it active, desists from distributing y. nervous power to y. different organs of y. system, & does not perform its usual functions. Whenever the mind is in this situation as often as this takes place, sleep is the consequence; but while y. mind is very attentive on any object, or kept buoyed by strong impressions from without, or violent affections within, sleep is a stranger to y. body. But what peculiar virtue of opium hath the power of putting the mind in y. this insensible state, if I may use the expression, is hitherto inexplicable. Some have ingenuously it to be owing to a rarefaction of y. blood, by w. y. brain is compressed. If this were true, this effect of opium, as it would be entirely a mechanical operation, must be always constant & take place at all times. For there is without doubt no condition of y. body so constantly regular & alike so much in the same manner, as the mechanical compression of y. brain: for according to y. degree of compression, there will be either sleep, stupor or apoplexy take place.

*

But sleep is not ye. constant effect of opium: sometimes it produces Watchfulness, at other times a delirium, & on other occasions frightful dreams: all of which are in like manner unaccountable to us. Giddiness, Intoxication & Convulsions are sometimes produced by opium, without our being able to assign the least reason or even hint at ye. cause. Those Authors who have attempted ye. explanation of these phenomena, are so vague & contradictory ~~that they~~ as fully shew us that they groped in ye. dark, & knew very little about ye. matter: We have nothing on ye. subject but conjectures & suppositions, yt do not deserve a repetition.

After the narcotic action of ye. opium is over, the sensibility & irritability return by degrees, whence the pains & disorders, which were only lulled by ye. opium, but not removed, return again. The body ~~remains~~ is left heavy, the mind dejected; & ye. head is generally affected w. pain. These Symptoms are partly owing to ye. pressure of ye. body being for a time suspended & injured; nor do they recover themselves quickly, but remain for some time weak & unfit to perform their usual & proper offices. But they are chiefly occasioned by ye. increased irritability, which is left by ye. opium after its operation.

Opium given in large quantity or often repeated ~~debilitates~~ enervates ye. system in general; weakens all the animal functions, & debilitates ye. organs of digestion & chylification. This is evident from what hath been said in this & foregoing lecture: Muscular motion & ye. digestive power of ye. stomach & intestines consist in the strength & force of ye. Nerves; whenever therefore these are relaxed, it cannot be otherwise than that there must be weakness.

From what hath been now said on ye. ~~act~~ Virtues of opium, its mode of operation & ye. effects which it produces, we may be much better able to judge of its use in diseases. We have sufficiently established its operation to consist principally on ye. nervous system; & that it does not act by purifying the blood, or that ye. pulse is quickened by its operation: The past, & other diseases, in which it is useful and the proper time & manner of administering it in them, shall be the subject of our Lecture to Morrow.

We are now to consider the use of opium in the cure of diseases. It is frequently used as a palliative & sometimes altogether to cure & remove painful sensations. Pain may be considered as of 3 kinds, arising from 3 diff.t causes: viz: Inflamatory distension: Spasm & Irritation. Pain arising from inflamatory distension occurs in all topical inflamations e.g. the Pleurisy, Rheumatism &c. Opium can have little or no effect in curing pain arising from this cause, tho' it may afford a temporary relief by diminishing y.e Sensibility of y.e System and rendering it insensible to y.e pain. But even this temporary relief is counter ballanced by y.e bad consequences attending y.e use of opium in these Diseases. I observed before that it causes an accumulation ~~to take~~ in y.e larger Vessels, at y.e same time leaving y.e body more irritable, than before it was taken: hence the system is not only left more susceptible of pain, but y.e accumulation in the larger Vessels stimulates the heart & arteries, by which y.e pain & inflammation are necessarily increased. We should therefore be cautious how we order it in these cases, unless some particular symptom indicates its use. Thus as I observed in my last lecture, when in a pleurisy or peripneumony the patient is troubled w.th a constant irritation in the trachea, occasioning incessant coughing & y.e discharge of thin acrid mucus, y.t will not fit the parts; a dose of opium will have a very good effect in relieving this troublesome symptom, by which our patients and sometimes a physicians may be benefited; but then it will be highly proper that y.e necessary evacuations should have been premised. To prevent its checking y.e expectoration, which is y.e only salutary evacuation, it may be proper to add some squills w.th an intention of promoting y.e discharge by expectoration. — In an acute rheumatism it cannot answer any good purpose, as it can only afford a temporary relief, w.out diminishing y.e disorder in any measure. In an chronic rheumatism it may be employed w.th more propriety; but even here it cannot be of any considerable use, unless we combine it w.th Ipecacuanha or some other emetic, by which we obtain a very powerful sudorific: and Rheumatisms are frequently cured by sweating

The toothach is very often a rheumatic affection & owing to an inflamatory dispo-
sition of ye. Vessels in the tooth: a topical application of opium will generally al-
leviate ye. pain, without ye. danger of any bad consequences following from its
its effects and then seldom extended to ye. other parts of ye. system: it not only takes
off ye. sensibility in ye. part affected, but may also destroy ye. nerves of ye. tooth. It
has also been by some used & recommended to mitigate ye. pain in the Gout. —
It is however better to refrain from its use during ye. height of ye. disorder, un-
less the pain should be so exceedingly tormenting as absolutely to require a
palliative. But at ye. close of ye. disease, when every disagreable irritation &
uneasiness still continues, which reduces ye. patient much, the ye. inflamatory sym-
toms are gone off, this medicine will frequently be attended w. ye. very salu-
tary effects, and in a short time restore ye. patient to strength & vigour. Opium
may likewise be employed w. great safety in suppurations: for as the part affected
suppuration irritates ye. whole system and is exceedingly painful, opium
relieves the pain & even advances the suppuration. We therefore frequently ex-
perience its good effects in the small pox, when the patient is very restless & ye. irri-
tation violent, by which ye. suppuration or filling of ye. pustules is delayed: giving
opium in this case composes the patient, & leaves Nature uninterrupted in
advancing the disorder. It will not however be amiss to guard against ye. costive-
ness, which in this case is commonly ye. consequence of using opium freely. —
Opium may be said to be incidentally indicated in fevers arising from spasms.
in these it is not merely a palliative, but is frequently ye. means of curing ye. dis-
ease radically. — It is of excellent service in ye. Tetanus & Colic: It is generally prou-
dent first to administer a Glyster, or evacuate the bowels, by some gentle purga-
tive, and after that give a proper dose of this medicine. If ye. disorder is
accompanied w. great heat, thirst, quick & hard pulse, high coloured Urine, great weak-
ness and debility; heat in ye. abdomen, with a hardness & distension of it, & this
at ye. same time very sore to the touch, it indicates an Inflamation in ye. bow-
els, & then requires copious bleeding & a very strict antiphlogistic method

But when the person is free from any symptoms of inflammation, we may safely order the opium. In the cholera when there are violent evacuations both by stool & vomiting, which often threaten y. patient w. imminent danger, opium is an excellent medicine. In this case we order the patient to drink plentifully of barley water or some other agreeable diluting liquor, and at y. same time order injections of y. same nature: we may likewise apply cloths dipt in vinegar to y. abdomen & order proper quantity of opium, repeating them untill the desired effect is produced. The bilious colic should be treated in a similar manner, & both in this & y. former we should always order a vein to be opened, if our patient is at all of a robust or vigorous habit. In my last lecture I told you y. opium diminished y. secretion of y. bile, as well as all other secretions: it is therefore useful in a double view in y. bilious colic. It is also serviceable in the Ileac passion, which is one of y. most terrible & distressing disorders, which is frequently owing to & commonly accompanied w. spasms. Our principal indication in this disease is no doubt to evacuate the contents of y. bowels, & remove y. costiveness which is y. immediate cause of y. disorder. This costiveness however frequently depends, both in the Ileus & Colica pictonum, upon spasms, and unless we allay these it will be of no consequence to attempt producing an evacuation by y. means of purgatives. For they will often have no effect unless we previously use opium. I have known patients tormented w. swallowing off castor oil & other purgatives in y. Ileus, when y. spasms were at y. same time so violent & y. disorder at y. stomach so great, that they could not retain a spoonful of y. most agreeable liquid: whereas if a good dose of opium be previously given to allay y. inordinate motions of the stomach, a purgative may then be given with propriety & an almost certain assurance of success. We may also combine y. opium w. y. purgative; & tho it does in some measure check the operation of it, yet it does more than compensate for it by taking off spasms. — Opium is also very proper in the dry belly ach, & may precede or purgatives; & Dr Hillary & Dr Mackin both

frequently employed it in this ~~latter~~ manner. It is also useful in spasmodic affections of the stomach; tho it ought not to be used too freely in these cases: for as they are generally owing to debility & acidity in ye. organ, ye. continued use of opium would eventually cause of ye. disease: in these cases then we can only consider it as a palliative. It is also an effectual remedy in spasmodic affections of ye. Uterus: these are of 3 kinds 1. Those ye. take place aby. menstrual period: 2. aby. discharge of ye. Lochia & 3 dly they sometimes accompany Childbirth. Spasmodic constrictions frequently take place aby. menstrual period both in ye. bowels & Uterus: opium relieves these & aby. same time promotes ye. evacuation. It is also an effectual remedy against ye. pains after Labour or what are generally called grinding pains. These are often more painful & distressing than ye. pains accompanying the Labour. We should give the opium in ye. beginning of these pains; for after they have continued some time they are apt to bring on an inflamation of ye. Uterus, wh. greatly endangers of ye. patients life, when opium would be no longer proper. It is also useful to apply cooling fomentations to ye. abdomen; but we should above all be well assured ye. these grinding pains are not ye. consequence of some Injury done to ye. Uterus during ye. time of Labour; for in this an inflamation is much to be apprehended, wh. should be guarded against by all possible means. The spasmodic pains, or what are by ye. common people called false pains, wh. frequently precede the real labour pains, are effectually removed by opium; & it does not aby. some time in ye. least hinder ye. real labor pains from taking place. We may also order Opium to prevent an Abortion. If a pregnant Woman gets pains resembling labour pains, at an improper time, she is threatned wh. Miscarriage. In this case we should order some blood to be taken from ye. Arm, & give her an anodyne, aby. same time strictly enjoining rest & composure. If ye. pains return again after ye. operation of ye. opium is over, we must repeat ye. dose & endeavour to remove the pain. Many Women will by this means escape a Miscarriage; but if there is a hemorhage from ye. Uterus,

without any pains; and ye patient feels her head to swim or a dimness or
cloudiness before her eyes, w^h a change of her countenance, our endeavours
will be to no purpose: the sooner she is delivered in this case, ye better.
may also be given w^h advantage in ye paroxysm of a Nephritic. In this case it will
be proper to open a vein & take away such a quantity of blood, as will sufficiently
secure us against any symptoms of inflamation: it will also be necessary
evacuate the bowels by Glysters: also inject emollient Glysters to last
by relaxing the parts: we may then give the opium & repeat ye dose two or
three times a day, as the case requires. Emollient fomentations or cataplasms
are to be applyed to ye part affected, which ye patient continues in bed: but he
should frequently be taken up and put in ye warm bath, by which all ye parts of y^e
body may be as much relaxed as possible. Upon the stomach, to take off sick-
ness & vomiting generally accompanying this disease, we may apply a bag filled
w^h Mint & Lavender, that hath been infused in hot water: this will generally afford some
relief; & the patient is at ye same time to drink plentifully of an infusion of
Mallow leaves or root, or any other mucilaginous emollient liquor. This course
and is to be continued during the paroxysm, and we order the opium from
time to time as the pains require it: after ye paroxysm is over we have
recourse to the prospect & most approved remedies, by which a return may be
prevented. The opium in this case seems to act in ye following manner: when a
small stone falls into ye ureter or neck of ye bladder, it produces by its constant irri-
tation, a sufficient quantity of urine to be collected for dilating ye passage by which
the stone may pass off. Opium in this relieves the complaint by taking off for
a time the mind & diminishing ye sensation of ye pain occasioned by ye irrita-
tion, whereby there is time for an accumulation of Urine to take place; which
after ye effects of ye opium are over, dilates ye neck of ye bladder or ureter & carries the
stone off with it. The other remedies employed at ye same time contribute greatly
to this effect; for as antispasmodics they diminish the irritation: as by their
emollient virtue they slac the parts & render them more capacious, to per-
mit the passage of the stone

* In the London medical Essays there are several cases related of a locked Jaw coming on in consequence of a Lesion of some Nerve, & being cured by the use of Opium. Amongst the several cases there related there is one by Mr. Thomas White, Surgeon at Manchester, which is since reprinted in his Treatise on cases in Surgery. — The locked Jaw in this Instance came on in consequence of a wound in the finger, for which Opium was administered freely & prevented the increase of ye. disease but did not prove effectual in curing it, untill Mr. White, who at first did not discover that ye. disease had originated from a punctured nerve in the finger, amputated ye. injured Joint, & then by continuing the use of the Opium effectually relieved the patient from this violent disease. —

Opium is universally recommended for ye cure of ye Tetanus, ye opistotonos & what is more commonly called ye Lock Jaw. These disorders are always occasioned by some very violent Irritation affecting the Nerves, and are purely of a spasmodic nature. They are very often produced by a puncture or other lacerion of a Nerve. There have been Instances of persons dying of this disease from a prick of a Toe or finger. Whenever the cause is external and within reach of ye knife, we should never hesitate about taking off ye affected part or Joint, & thus rid the body of the Irritation, which sometimes, notwithstanding all our endeavours to relieve the patient, proves fatal, unless it is amputated in time. The Medicine wch hath hitherto been found most useful in this disease, is opium: we give it internally and may at ye same time apply it externally in such doses as promise to prove effectual. The Doses which are prescribed in other disorders, have little or no effect in this disease, and our patients will bear an incredible quantity without suffering ye least inconvenience from it: On the contrary, as there is perhaps ye greatest Irritation & most violent convulsions, ye attend any Disorder whatever, present in this, we should adapt our medicines to ye violence & alarming state of the symptoms. There are Instances of many drachms being taken, before the patient experienced any relief: It is impossible to give any certain rules for ye doses necessary; but we should give it in such quantities & repeat it so often, ye we may be well assured of its producing some effect on the system.

Opium hath also been recommended to relieve the fit of the Asthma. There are two species of Asthma the one is purely spasmodic, owing to a constriction of ye air Vessels in the Lungs: the other is called ye Asthma Humorale and is occasioned by a deflexion of Mucus & phlegm into the Lungs. In ye former there is no secretion or expectoration of mucus during ye paroxysm; but on the fits going off, there is a slight expectoration: in the latter there is too great a secretion of Mucus: The former is relieved by Antispasmodics & Opium: the latter requires such stimulants as will expede the discharge of Mucus from the Lungs: the former returns periodically: the latter continues frequently for a considerable time without any Intermission. We give never give Opium wch any other intention

in y. spasmodic asthma, but to give a present relief & palliate the disorder, or
also to put off y. threatning paroxysm. For this purpose it will however be
prudent to combine it with Squills: for as we observed in our last Lecture y.
Opium disposed to Inflammations & Obstructions in the Lungs: the Squills will counter
act this effect, without lessening y. good qualities of y. opium; which might otherwise
by occasioning these obstructions lay y. foundation of a continued difficulty of
breathing. Sir John Floyer, who was himself cruelly tormented w. y. asthma, hath
left us an excellent treatise on this subject, as it was wrote from his own frequent
experience of y. disease. He always by Emetics & purgatives evacuated the contents
of y. Stomach & Intestines, & then did not hesitate to take a small dose of Laud-
anum in the Evening on going to bed. He also frequently instead of using y.
opium, employed y. distilled Water of y. red poppy, to 3iij of which he added ℥ss
of y. Syrup of poppies & ℥ss of Balsamic Sulphur which he found a pleasant &
efficacious draught. — Opium is also used to relieve headaches, which are often peri-
odical and may be owing to various causes. When they arise from a disordered state of
the stomach, emetics, purgatives & stomachic bitters are the proper medicines.
When they are of a rheumatic or arthritic nature, y. general remedies adapted for y.
cure or relief of those diseases, will also prove useful in these cases. When head-
aches are owing to a weakness & debility of the parts, bark & Valerian, w. chalybeate
medicines & y. cold bath, will generally relieve it. When they are more purely nervous
and return at a certain hour of the day, without fever or inflammation, we may
give Opium about half an hour before the fit is expected; this repeated for
some time will sometimes cure the disorder radically. We should make
a previous experiment with a Vomit & y. bark, in y. same manner as we
employ it for the cure of an Intermittent, if this fails, it will not only be
proper but necessary to have recourse to the Opium. For this purpose it
may also be proper to combine the Opium with Ipecacuanha, by which the
composition we frequently throw the patient into a profuse sweat,
which is of no small service in relieving the disease

We are in the 3d place to treat of the pain which is owing to Irritation. This applies chiefly to its use as a palliative, and we sometimes order it in cancerous & other ulcers, to ~~take off~~ mitigate y. excruciating pains w. which our patient is tormented. In a cancer, when the patient is past hopes of recovery, we may order an anodyne for the evening, to procure him some respite. We may also give it to moderate the pains, at y. same time that we employ other remedies ~~that~~ to cure y. disorder. It is so far from being prejudicial, that it will even contribute to y. formation of good pus. We may also order it to ~~take~~ mitigate ~~venereal~~ nocturnal pains from venereal ~~infection~~, & thus palliate the disease untill something more effectual can be done, by ~~takes~~ a course of mercury or other remedies. In ulcerous suppurations of any part, for instance of the liver, it will likewise afford considerable relief, without doing any prejudice or hindering y. suppuration. Likewise to allevate y. troublesome & uneasy coughing in a Consumption. The cough which is excited by y. pus in the lungs, is not much relieved by anodynes; but towards the latter end of the disease, there is a troublesome cough, from the mucus in the fauces & trachea being abraded, which occasions the patient more than the disorder of the lungs; and it is that cough that is in a great measure relieved by the opium. Opium hath also been administred in a variety of other disorders, that we are next to treat of. It hath been employed for y. cure of Intermittent fevers by y. greater part of the Ancients & some of y. Moderns. For this purpose we give it about half an hour before the fit is expected, which it will seldom fail of putting off for the time; and by repeating the dose for two or three days, ~~at~~ in y. same manner we may ~~c~~ cure the Intermittent altogether. It acts in this case entirely on the principle of an antispasmodic: for if it be given too long before the fit it will have no effect in securing the person from it: nor will be of any service, if it is given during y. paroxysm. It may also be employed ~~at~~ in y. evening, especially after a vomit, to promote y. perspiration, & ~~make~~ render the bark a safer and more efficacious ~~a~~medicine in y. cure of Intermittents.

It may also be useful in the nervous fever, given at Night to compose the patient & promote perspiration: it should not however be given in y. beginning of y. disorder; and towards y. latter end the body is frequently in such a state of irritability, that it rather requires Stimulants than sedatives. If we find y. the first dose is not attended w. relief to y. patient it will be safest to abstain from its use & employ Antispasmodics, such as Camphor; fomentations, and where a stimulus & cordial is required, Wine will answer the purpose best. Opium is recommended in Diarrhoeas & Dysenteries by some, whilst it is very much condemned by others. It would be highly improper to give Opium in these Disorders, unless the stomach & bowels had been previously evacuated by Emetics & purgatives; and when the fever is considerable & y. patient robust, bleeding ought also to be premised. But if we give a cathartic in the morning, we may safely venture on an anodyne in the Evening. I have frequently known Dysenteries cured in this manner without giving any other Medicine: A dose of Glauber salts was either given in the Morning, or what I think answers the purpose better, an Ounce of the Salt is divided into eight equal parts, of which one is taken every hour: we thus evacuate the bowels gradually and more completely than by giving a full dose at once: In the Evening we give a proper quantity of Opium & in order to render it more adaptive, we may add a grain or two of Ipecacuanna or half a grain of Tartar emetic, by which we generally throw the patient into a profuse sweat & restore y. determination of y. fluids to the Skin, on which the cure of the Dysentery much depends. — It is always almost a criterion of the disorder taking a favourable turn, if y. patient sweats plentifully: and unless he sweats, the the purging should cease, it is only a temporary cessation, and the disease generally returns shortly w. more Violence than it came on at first. — The Morning after having given y. opiate we have again recourse to the Glauber salts; but y. so divided into 8 doses will now be sufficient & will operate without the least inconvenience; and in the Evening we may again have recourse to the Opium joined w. some emetic

The purging answers another very good purpose, besides evacuating ye. Intestines, especially if the Medicine be given at repeated doses. It prevents the horrid uneasiness, which so commonly attends this disease, and is the most disagreeable symptom attending the disorder. It is only very painful, when the patient cannot have a discharge, ~~which~~ but hath a constant inclination to a stool: giving the Glauber salt in the manner just related: or when the Griping are very severe, ordering a composition of Castor Oil & Syrup of Marshmallows, of which the patient is to take small but repeated doses, we generally afford him very great relief. If the Symptoms are very urgent & the pains very excruciating, we may add the Laudanum to the Mixture of Oil & Syrup, and thus allay the pain, and at the same time increase the evacuations. These mild purgatives are much better in this case than the acrid stimulating cathartics e.g. Rhubarb, Jalap, Mercury &c. which frequently increase the pain very much, by their irritating & stimulating qualities; ~~and~~ they will also add to the fever: which the neutral salts by ye. sedative quality, and ye. Castor oil by lubricating & defending ye. Intestines from ye. stimulus of ye. acid faces, will have a tendency to moderate. —

Opium hath also been generally recommended & frequently employed for ye. cure of Catarrhs or effusions on ye. Breast: In this disorder however its use is ambiguous: for where expectoration is to be promoted it is better to abstain from it, unless we combine it with stimulating Medicines such as Squills, Ipecacuanha &c. which will obviate ye. bad effects Opium may have in checking the expectoration: but where the Cough is very severe & greatly increased by an irritation & titillation in the trachea, accompanied w.th a discharge of thin acrid Mucus; the use of Opium is highly proper: as most recent Catarrhs and however accompanied w.th inflammatory symptoms; & the constant Irritation & coughing will frequently produce an Inflammation in the Lungs, it will commonly be prudent to take away some blood; which at the same time that it guards against the fever & Inflammation, will ~~also~~ operate as an antiphlogistic & greatly contribute ~~it~~ to relieve the disorder —

The Cough is one of the most the disagreeable & dangerous Symptoms accompanying the Measles; which is also accompanied w.th a difficulty of breathing and frequently terminates in a peripneumony or some other disorder of the Lungs that proves fatal. It is probably owing to the eruption also taking place in the fauces & trachea & irritating those parts: We should always premise bleeding if the strength of y.e patient will possibly bear it & then keep the body open, not by purgatives, but by laxative Drinks: we may then endeavour to allay the cough by administers of oil of Almonds or pure magnesia w.th Syrup of Marshmallows, a little barberry Jelly & some of Syrup of Poppies: which will frequently take off y.e Irritation in the fauces & expand the effusions were into the trachea. If this is not effectual we must attempt relief by some other Medicine. Sydenham & many others have had recourse to Opium; for which they have been severely censured by many of y.e most eminent Physicians, because they opinion was supposed to act merely as palliative & irritate the body to greater inflammation. But in my opinion Opiates are of most service by taking of the Irritation in the Fauces, & thus relieving the cough, which will often produce an inflammation in the Lungs; than they can possibly be of disadvantage by increasing the inflammator Symptoms in y.e Constitution. Storch & De Haen have both employed it with the greatest success in this disease; we often observed that the constant tickling in the throat will bring on a constriction in the trachea & Lungs, w.ch effectually prevents any secretion & expectoration; but ge by giving an anodyne, the Irritation is taken off, the Spasm is solved, and our patient will expectorate freely. Doctor Young in his treatise of Opium observes that he has frequently seen children so fatigued by violent coughing; that the eruptions were pallid & y.e patient was sinking fast under the disease, but on giving a single dose of opium, the pain was allayed, the eruptions again appeared, the face from a dead heavy appearance became lively; the natural tone of the Voice was restored, & the children were in a short time out of all danger.

Opium hath within these few years been employed for ye. cure of the Venereal disease, & it is asserted that it is infallible & in every stage of the disorder. — ~~It virtues~~ antivenereal virtues were first discovered on the following occasion — A Gentleman in the Hospital service of the British army at New York had the venereal disease & was afflicted with it to such a degree as baffled all the usual methods of relief, as his case was desperate & it was expected that it would prove fatal to him, he quitted N.Y. & went to England, to die in his native Country & amongst his friends. His acquaintances at New York considered him as a man who had not long to live, & therefore never expected or looked for any further accounts of him; but to their great astonishment found him return in perfect health & former vigour & alacrity. They were curious to know by what medicine or rather miracle he had been restored, and he gave the following account of himself — That after his return to England, without the least expectation of deriving any benefit from medicines, he took opium to mitigate his pain & procure him temporary ease: that he took it for this purpose in considerable quantities (nay it is even conjectured ~~that~~ from the quantity he took that he wished to shorten ye. duration of his miseries), and after persevering for some time in the use of it, was surprized to find that it not only mitigated all his symptoms, but that ye. ulcers put on a favourable appearance and shewed a disposition to heal; this however made no alteration in his plan, which he persevered in, and finally found himself relieved of all his complaints & restored to the perfect state of health in which he presented himself at New York — This account naturally

Opium is also frequently useful in Hæmorrhages. For as they it is antispas-
modic and diminishes ye action of ye heart & arteries, it will often check
ye evacuations of blood. Fraller, who treatise on Opium we have so frequently
quoted, hath often experienced ye good effects of Opium in every kind of
Hæmorrhage owing to Plenitude. Dr Whytt likewise recommends it in
all ye cases of hæmorrhage ye are either owing to or accompanied wd pain.
And we may often by ye timely exhibition of this remedy check ye
flux together stop ye hæmorrhages from ye diff. parts of the body. In
the Hæmorrhage of ye Uterus in pregnant Women, we may with advantage
employ Clysters of warm Water to which Laudanum may be added from
10 to 60 drops. Opiates are however particularly useful in those hæmor-
rhages ye proceed from spasm & irritation; in these they may often cure
the disease: but when ye evacuation is owing to an increased action
of ye heart & arteries, bleeding & ye antiphlogistic method is indicated; when
it is owing to relaxation & debility, Opium instead of eliciting ye body
hæmorrhage, will rather increase it, by adding to ye relaxation. In both
the latter cases however ye discharge of blood may be so considerable
as to threaten the life of ye patient, and to require palliating medes
untill we can remove ye cause of ye disease: Opium in therefore
sometimes necessary to procure a temporary relief, & thus give us
time & opportunity to administer such other medes as will effectually cure
the disorder. In these cases it acts merely as a palliative, by diminishing
ye force of ye circulation: but after its effects are
over, the hæmorrhage will return wd more violence than after, unless
we guard against it by ye medicines proper for ye purpose. We are there
fore to observe that when any hæmorrhage is owing to or accompanied wd
Spasm & irritation, Opium may always be employed wd safety & advantage
but when ye disease is owing to plethora or to debility, Opium cannot only
afford a temporary relief, & we should therefore never have recourse to it
but in the most pressing cases

excited the attention of the military Practitioners, & they found opium answerable to y. expectations that had been given them of it — They from that time used it in the hospital on every occasion for this disease, & applied it in every stage of the disorder & with invariable success. Dr. Michaelis, the Physician general to the foreign troops in y. British service, assured me that no other medicine was now employed for y. Venereal disease in the hospital department under his inspection & that he had not known it to fail in any instance. They generally began w.t doses of a grain two or three times a day, but soon raised them by degrees to ten or twelve & even more grains in y. 24 hours, & that no inconvenience was ever perceived from these large doses; but that it appeared as if the system soon accomodated itself to the use of this remedy. The venereal Ulcers were dressed with a watery solution of the opium. The above account hath since been confirmed to me in all its particulars by Dr. Schöpff, the Surgeon to the Anspach regiments, who likewise assured me that neither Mercury or any other medicine hath since been used for the venereal disease in his department; & he particularly mentioned a case of a Person who had been twice, as it was supposed, perfectly cured of the same infection, by the use of Mercury, but his disorder both times broke out again; he was then put on a course of opium, which cured him effectually & he hath not had any return of his complaint since. — I have myself administered the opium in several cases, but as in private practice

Opium is ye produce or inspissated juice of ye papaver or poppy, ye growth
spontaneously in Egypt & other countries in ye east from whence it is im-
ported into Europe. — The narcotic quality is common to all ye diff. species of
poppy, tho none possess it in so eminent a degree as ye oriental papaver.
The best Opium comes to us from Egypt, wh. exudes after ye heads of ye poppy
have been wounded by an Instrument adapted for that purpose. —
Physicians have at all times been anxious to contrive a proper menstruum
for to extract ye Virtues of Opium, and at ye same time correct ye bad qua-
lities which they supposed it to possess; but ye diff. preparations of it appear
to have no other advantage that that of weakening its effects, which may
be as effectually done by lessening the dose; which to a grown person is
from ½ grain to 1 grain at a time, in substance. Then and however many
cases in which this dose is altogether insufficient: and we must also
take notice that Opium does not act so quickly in substance as it
does in solution. The best method therefore of administering it, is to give it
in solution, and in violent cases to repeat ye dose from time to time
untill it produces ye effect we expect from it. By this I do not however
mean, yt we should begin wth very small doses & encrease them gradually;
for by this method we should often be altogether disappointed in our expec-
tations of its effects. ~~But~~ We should give a large but prudent dose at first,
& if this is insufficient, we add a lesser one in about half an hour, or at
such intervals, ye effects of ye first may not be worn off, before we give
the second. We are also to observe that our constitution becomes in a short
time accustomed to ye use of ye medicine, when the usual dose will be
no longer have any effect, and in this case we ought to encrease it occasionally.
There are Instances of persons having accustomed themselves to take no
less than 3ij a day for 18 Months together. I do not here mean ye Turks
and other eastern Nations who repeatedly take 3ij at a dose for amusement
without any immediate bad consequences: nay we have an Instance
related of a Turk who swallowed no less than 3iv at one dose without any
other bad effects, but his being rendered stupid & senseless, which
symptoms however disappeared upon his having enjoyed some sleep.

there is not the same opportunity to attend to ye effects of Medicines as occur in Hospitals, and we besides ought not by trying a medicine delay the cure when we know a certain remedy for the disease. I have not yet trusted entirely to the opium, but always employed Mercury in some form or other at the same time. As far however as my experience goes, I am warranted in saying, that it was in every case attended with considerable relief to the patient, and that ye symptoms were evidently mitigated by it. I expect that soon to have ye opportunity of trying it where no difficulty will attend the exhibition of it, & when I shall certainly give it the attention it merits. If on farther trial its use in this disease should be confirmed with the favourable circumstances related of it, it may justly be considered one of the greatest improvements in ye art of Physic this age hath produced.

I have used Opium on several instances, both by itself & combined with mercury for ye cure of the venereal disease. In a Gonorrhoea I administer it without any addition & generally order one grain of opium in ye morning, one at Noon & two at Night. I have by this method ~~cured~~ made a perfect cure of the disease in ye course of 3 weeks & kept the symptoms from being troublesome or painful. In the Pennsylvania Hospital I have likewise administered it in one case with success, where the Patient had several ulcers on the Penis — He took ye opium internally & at the same time dressed ye ulcers with a solution of it, by which they were entirely healed. — But ye following case ~~of~~ affords a convenient

Pomfer however tells us that those who accustom themselves much to ye use of opium become in ye course of time melancholy, sleepy & stupid, in the same manner as persons who indulge in ye use of strong spirituous liquors: & if they happen to be without it, or cannot procure it at ye usual time of taking it they perish. Rasolquist, in his travels to ye east, amongst other instances, relates one of an arabian prince, whose servants, on a party of riding, had neglected to furnish themselves w.th opium for ye use of their master. He demanded it at ye accustomed hour of taking it, and was soon sensible of ye neglect & ye danger accompanying it: he dispatched several expresses to different places to procure some Mecheim: but he expired before any of them returned. Nothing can shew ye force of custom & habit stronger than opium: for here we see a person may accustom himself to ye use of a drug to such a degree as to perish for ye want of it; which is at ye same time a mortal poison to those who are not used it: for if a person not accustomed to ye use of it, should accidentally swallow ye so, it would be at ye imminent peril of his Life. This consideration hath induced physicians to use their endeavours in ye discovering some antidote, which would counteract ye bad effects of ye drug, when taken in too large a quantity. Amongst other remedies used for this purpose, acids have been found to be very effectual; which leads me to make an observation in practice: that we should never combine opium w.th acids for ye purpose of medicine: it is therefore a very bad practice w.th some physicians to add Laudanum to acidulated Julaps. Vomits should also be given to persons under the violent effects of opium, before the patient becomes so insensible as to lose ye power of swallowing. We may also inject stimulating acrid clysters, and apply sinapisms w.th blisters externally. Dr. Haller hath an instance of a young Woman who had imprudently swallowed 30 ℈ of opium, from w.ch she fell into a heavy sleep of ye lasted 48 hours and was at last brought to by tickling & stimulating ye nostrils & fauces so as to excite

Vomiting

proof of the efficacy of his medicine. A Gentleman had been
several Months afflicted with an Ulcer in the groin, the
consequence of a venereal bubo, which would not yield to
any methods that could be devised for him — He was under
the care of two Physicians in this place who had made use
of various preparations of Mercury during the whole time
he had been ill, but without success — The knife & y. caustic
had been employed to destroy y. hardened edges of the Ulcer,
but they returned again immediately. When my advice
was desired I found him with an ulcer about y. size
of a french crown in the groin, with ragged, uneven hard
edges that threatened its degenerating into a Cancer, & also
small ulcers had just made its appearance on the Pubes —
Mercurials & bark had been tried in every shape ineffectually
it was therefore determined that he should take y.
extract of hemlock in large doses; foment y. ulcer w.d. and
Infusion of Dittany & as y. pain in y. ulcer was excor-
ciating, & anodynes gave him a temporary relief, he was
directed to take a sufficient dose of Laudanum every
morning to quiet the Pain — After continuing this method
week, it was found that y. progress of y. disease was indeed
checked, but there was not any appearance of y. Ulcers healing.
It was therefore determined to give him opium in such quan-
tities as should keep him entirely free from pain, & that he
should for this purpose take from 8 to 12 grains of Opium
in y. 24 hours. — This had the desired effect, the Ulcers
a few days put on a favourable appearance & in about

cuta, Hemlock. There are several plants by Authors called Cicuta. Linnaeus in order
distinguish them & prevent confusion hath called the plant we are now to treat
of, viz. is the Cicuta of Storch Conium maculatum & considers the term of Cicuta
the Water Hemlock, which is altogether a different plant. This Conium hath
by some been supposed to be y. same as the hemlock which the Antient
Greeks employed to deprive their State prisoners of life, and of which among
them, Socrates perished; but the plant used for this purpose is the
Cicuta aquatica or Water hemlock, and not the Hemlock we are now speaking of.
Conium hath been always esteemed a good remedy in external applica-
tions to resolve scirrhous tumours; and of late years Dr Storch hath
discovered that it may be employed w. safety internally for y. same
purposes. Ever since he hath published his Treatise on the use of hemlock
for y. cure of Cancers, Physicians have differed greatly in their opinion of
its Virtues: and whilst some confirm Storch's observations, others are as con-
fident in denying the truth of them: Both Parties may be in the right;
but then they have differed about the Name & Nature of y. disease. It
will not therefore be amiss in this place to give you a short account
of cancerous, scrophulous & venereal sores, with y. Death of nonsense Symptoms
by which we can distinguish them, and then ascertain the cases in
which the Conium formerly relief. What I shall offer to you on this subj.
it is chiefly taken from a treatise lately published in y. swedish Language
which the Author hath transmitted to me. There are perhaps few practitio-
ners now living who have had y. experience of this Gentleman in these
particular cases: He some years ago was furnished by y. Government
in Sweden with a sum of Money to purchase from Mr. Grey the use of
his powder for Cancers, for y. term of 20 years. He hath now practised
in this particular branch for 12 years, & hath been applyed to from
all y. northern parts of Europe, by which he hath obtained a knowledge of
these diseases, superior perhaps to any person now living, and improved
it beyond any thing y. hath ever been said or published on the subject

3 weeks was perfectly healed. Since that time I administer it in every venereal complaint, often without any adde but most frequently, particularly in venereal complaints of long continuance, I combine it either with y. corrosive sublimate or Calomel. I have scarce ever found that it made y. Patient drowsy, or as they were not conscious that they took opium, they expected no such effect & therefore did not give away to any impression of the kind. It sometimes, particularly ~~for~~ in y. beginning of its being taken, renders the body costive, which is to be removed by gentle laxatives.

Belladonna, Solanum lethale; the whole plant is of a virulent nature, tho the Berries & roots possess this quality in a more eminent degree than the leaves. Even these however infused in Water possess a considerable narcotic virtue; for they promote sleep, & are hurtful to the eyes, by bringing on a paralytic relaxation of the pupil & with a temporary blindness. This is also sometimes y. consequence of y. external application of y. plant. Notwithstanding the equality of the Belladonna some of the modern Physicians have employed it for y. cure of cancerous ulcers in the breast, & prescribed it both internally & externally. Dr Bancher gives us the history of two women who were cured by the use of this medicine: He made a strong decoction of y. leaves, of which he gave a spoonful the first day; two the second, three y. third; & then continued to increase y. dose daily, untill he found that it brought on drowsiness: He continued in y. use of it for 2 weeks, & then gradually diminished y. dose. He however obs. y. same time that it was not always attended w. success. The celebrated Surgeon Heister gives us the case of a woman who was by this remedy deprived of her reason, tho it did not cure y. cancer for which it had been employed. Very lately however Dr Lambergen cured a cancer of the breast by y. use of this remedy, which was taken for 17 Months. The Antients, as Galen, Oribasius & others, applyed the Belladonna externally for y. cure of cancers; Dr Haller however informs us y. he could never perceive any good effects from it when employed externally. The following case is taken from Dr Cullen's Lecture on y. Materia Medica. A Woman born of a Mother y. had died of a cancer, & her Son, were both afflicted w. this terrible disease. The Son had a cancer in the Lip, & the Mother in the cheek, near y. angle of y. Eye. The Son took the Belladonna, beginning w. 1 Grain for a dose, which was by degrees increased to 12 grains of y. dried herb. This produced a secretion of good pus from y. Ulcer, prevented its spreading, and soon healed it up all to a small speck w. a scab. The Medicine also occasioned a heat & constriction in the fauces, that induced him to leave off taking it, before the Ulcer had healed

From y. account I gave you in my two former lectures & now on y. cure of Cancers, you must be sensible how vague Physicians have been in their treatment of this disorder, owing to the indeterminate idea they have of the disease — An infinite variety of medes have been at different times recommended as effectual for the cure of it. You may however be assured that internal remedies can only be useful in that particular species w. we call the Cancer scrophulous; and that they ought always to accompany our external applications. But the Cancer gelatinous & fungous are local disorders and to be cured by topical applications. These ought always to be employed in the early stage of the disease; & when the Cancer is situated in a part where the knife can be used; this is certainly the most effectual & the least painful & the shortest method of cure we can employ. — Where the knife cannot be used we then have recourse to caustics of a particular nature, that will eradicate the disease, without irritating in the manner mercurial & antimonial substances are known to do. — Guy's powder of London has this undoubted effect. A Gentleman of this place went to Lond. and put himself under the care of two Physicians & two Surgeons of the first eminence in that City. They employed various remedies for his relief; but to no purpose; he then applyd to Mr. Guy, who cured the disease in a very short time

altogether; but the cancer afterwards breaking out, recourse was again had to the Belladonna, and w.th y.e same good effects as before; but was also again attended w.th y.e contraction of y.e fauces. After this y.e Boy was seized w.th a vomiting of Blood & of which he died. In the Mother of the Boy y.e Cancer had already subsisted for 15 years: it first began w.th a small excoriation which gradually extended to a large. She used y.e Belladonna w.th great caution & in a short time found her pains greatly alleviated: y.e further extension of y.e Ulcer was prevented, good pus was formed & y.e sore altogether contracted. In this state she continued for 4 years. Whenever the sore begins to spread, she hath recourse to y.e Medicine, which effectually prevents y.e further progress of y.e disease: sometimes she even goes so far as to make it contract a little, but never ventures to heal it up altogether. From the history of these cases, it is evident that they were of y.e species which we called y.e Cancer scrophulosus; and in which it will be allowed safe to repeat y.e experiment w.th the Solanum lethale; tho in y.e other two species it must prove hurtful in y.e same manner as the Hemlock & Hyoscyamus, Henbane; this possesses no inconsiderable narcotic virtue; wonderfully hath shewed that y.e use of it would confound the head & understanding as much as drunkenness from spirituous liquors. & Boerhaave tells us that either he & his companion who making the Emplastrum e Hyoscyamo, they were both seized w.th a vomiting from y.e exhalation of y.e Henbane. Haller also gives us the case of one of his fellow students alledged under Boerhaave, who made it a constant practice to taste the different plants & herbs y.e grew in the medicinal garden at y.e University, w.th some of the most poysonous; but on tasting the henbane, he was deprived of his reason, & seized w.th a paralysis of one leg; from both of w.ch he was again recovered by Boerhaave. The leaves bruised or boiled in Milk are of service in painful tumors or swellings; and also in spasmodic pains & irritations, w.th out swelling, applied to y.e part affected. Of late it hath also been introduced into Medicine for y.e cure of various internal diseases, and hath been employed for y.e in intermittents & chronic rheumatisms, where it seems to answer

Various attempts have been made to discover the composition of this medicine; in the Edinburgh medical Essays it is asserted that Arsenic is the basis of it, & that it hath been long in ye possession of a family in Ireland of ye name of Plunkett. — I take it however granted that ye composition is not ye same, as we have not had it confirmed by further experience. — A Remedy hath likewise been lately introduced here by Dr. Martin; & from ye various testimonies in favour of it, appears to deserve a particular attention. — He is at this time applying it in a case which hath resisted a variety of remedies; & at present the appearances are in favour of his succeeding; but as the cure is not yet completed, I meant ~~defer~~ suspend my judgment ~~some~~ upon it; I expect however it will be determined before this course of Lectures is concluded; that I may have ye opportunity of giving you my candid & unprejudiced opinion. —

much y. same purpose & act in y. same manner as opium. I tried it several times, during my Studies at Edinburgh, in persons afflicted w. dysentery; where I conceived Opium would be hurtful: I found it attended w. very good effects: it took of y. pain in y. Abdomen & Tenesmus, without checking y. evacuation by stool, so much at least as opium does. In one or two instances I also found it to prove remarkably diuretic. The best way to give it is in an extract, from ½ gr. to 2 gr. for a dose. Dr Storck hath also employed it for a variety of other diseases, but as I never had an opportunity of observing its effects in the disorders for which he recommends it, I must refer you to his own treatise for a more particular account of y. virtues of this medicine.

Nicotiana, Tobacco; for which we are indebted to y. southern provinces of North America, as it was from thence first carried to England: It possesses a singularly rank & volatile w. something of a nauseous odour & taste: and contains a ty. same time a stimulant quality w. y. narcotic virtue. This plant is both nauseous & virulent; acts both as a purgative & emetic, and also disposes to sleep, in persons not accustomed to it. But by a continued use it is deprived loses these qualities & may be either chewed or smoked without raising at least any immediate inconvenience: nay it is sometimes useful in habitual costiveness, & there are instances of persons troubled w. this disorder to have become regular in their body on ~~smoking~~ accustoming themselves to smoak tobacco. I also know a Gentleman who was very much afflicted w. y. Cholic & had frequently been attacked w. it during several years; by y. advice of a physician in England he assumed the custom of smoking tobacco & from that time hath not had a return of his disease. Dr Lewis also gives us y. history of a person who was for many years subject to periodical evacuations of blood from the lungs; but was cured by smoking tobacco. But the principal use of Tobacco is externally in Glysters: Bitter an Infusion, or what is better & more common, the smoak of Tobacco is by a particular apparatus adapted to the purpose conveyed into y. Anus & frequently found very effectual

in very obstinate obstructions of ye. bowels; in colic pains; in strangulated & confined hernias especially if they have not continued too long a time; also in a tympanitis, or distension of ye. Abdomen by air. In ye. second Volume of ye. Ed. med: essays we have an Instance when the external application of Tobacco & Vinegar resolved or dissipated hard tumors in the hypochondria, at ye. same time exciting Vomiting: It was perhaps in a well manner owing to the Vomiting that ye. tumors were removed; for by this the part would be compressed & ye. Vessels excited to action, so as to remove ye. obstruction. A Decoction of Tobacco is sometimes used in foul Ulcers: we should however be very careful how we employ it in fresh Sores; lest among other Inconveniencies, it may occasion Vomiting & even convulsions. The internal exhibition is attended with very uncertain effects: for to some stomachs it is so very disagreeable, that even a small quantity will excite violent Vomiting. Some physicians are however very fond of the Syr: Nicot: in all kind of Fatherly & pectoral Complaints, ye. have continued for a considerable time: It seems overall calculated to act as a pectoral. we should boil the plant for a considerable time in Water, when we propose to prepare a Medicine for internal exhibition; for by this means ye. most acrid & nauseous parts will be aporate, & the Medicine rendered less liable to excite Vomiting.

Laurocerasus. By ye. accounts published in ye. Philosophic Transactions of London, of ye. expts instituted in ye. Laurel it appears to prove rather a poysonous & narcotic than a medical Virtue; for it is there proved by many expts ye. both men & brutes have suffered from ye. distilled Water of ye. Laurocerasus. I must however observe to you that we cannot always trust to experiments made on Brutes: Some substances prove poysonous to them, that are very innocent to us, & vice versa. Thus, for instance, Hemlock is by no means a disagreeable food for a horse; but infallibly destroys Cows as well as ye. human species. Bitters are not only in general disagreeable to dogs; but often destroy them, whereas in moderate quantities they are rather agreeable to Man. I had therefore if any of you should not be led to institute expts on brutes, in an intention of discovering ye. real Virtues

The Laurel is a strong poyson to ye. human constitution, of this there was an instance in England a few years ago, and ye. account published in a London Magazine — A Person who had married the Sister of a Man of great fortune, was desirous of possessing himself of the whole estate, but ye. life of his brother in law stood in ye. way; he therefore took an opportunity when his brother in law was indisposed to administer to him a draught of Laurel water, in ye. room of some Medicine ye Doctor had prescribed, which killed the patient in ye. course of a short time. The murder however was discovered & ye. perpetrator of it executed. ——

Tea & Coffee. — These two substances are here considered under one head, tho they are of a very different nature, however correspondent in some of the effects they produce on our constitution. Tea is undoubtedly a Sedative & Narcotic, but it possess this power in much higher degree when fresh than after it hath been kept some time. — But even after it comes to us, it will often affect persons of irritable nerves & weak stomach very considerably. I knew several of these kind of constitutions, who never take a cup of green Tea moderately strong, but what they are affected with Spasms in ye. stomach & other parts of the System. The bad effects of Tea have by many been attributed to ye. relaxing quality of ye. warm water that is taken with it, & they have even recommended its being taken strong, to counteract the effects of ye. warm water. — But they are grossly mistaken for as I just observed, I know persons who drink strong Tea with impunity, that are affected with Spasms, Tremors & other

of any medicine, you should always first endeavour to learn, whether ye. animal is affected by it in any particular manner, before you extend your reasonings & conclusions to ye human system

(Tea & Coffee).

Crocus, Saffron. The real medical Virtues of this substance are by no means properly ascertained; for whilst some extol it as a medicine of superior Virtues, others consider it as of very little consequence in ye Materia medica. Both opinions may in some measure be just: For if it be given in doses of grs. v. which is ye common quantity usually given, we may consider it as a very trifling & insignificant medicine; but when it is given from dj to ℥ss for a dose, no doubt it will produce some effect on ye. system. The seeds equal to what ye. persons of this medicine expect from it. Boerhaave considers it as a superior kind of remedy to strengthen ye. Nerves & excite ye. animal spirits. Galen, Borelli & Van Swieten observed ye. a large or immoderate quantity of Saffron will render ye head heavy & drowsy, even bring on an Apoplexy & death. But given in moderate quantity, it raises the spirits, sometimes even to such a degree as to occasion immoderate fits of laughter. Applied to ye Stomach externally, it is said to check Vomiting in children

Of Antispasmodics. The Word Spasm implies no more than Constriction, it is therefore necessary to add involuntary, violent & inordinate, in order to make a distinction between a morbid & a natural constriction. Spasm & Convulsion differ in no other respect, than ye. Spasm means more particularly a simple contraction without alternate relaxation: Whereas Convulsion signifies repeated constrictions & relaxations. They are however both affections of the same kind, affecting ye. same parts of ye. body, owing to ye. same causes, & are very often changed from one into ye. other. But at present we shall not take ye. term Spasm in ye. limited sense, but comprehend under it spasmodic motions of every kind, & under ye. Word antispasmodic rank such remedies as are suited to take off those motions, whether they be strictly spasms or convulsions

nervous symptoms as often as they take a cup of strong green Tea.
Green & Bohea Tea are the produce of the same Tree; but the former
consists of the Leaves that put out first in the Spring, & are of
course more tender & delicate; the latter are gathered in the Summer
and ~~are~~ may be considered as the second growth & of a much in-
ferior quality & flavour — Whatever the real or original
virtues of Coffee may be, they are totally altered by our manner
of preparing & using it, and whatever virtues it then possesses
must be attributed to the empyreumatic oil which it contains.
All empyreumatic oils are antispasmodic & sedative; Coffee
possesses the same Virtues, and is therefore often useful in
spasmodic affections of the bowels, & Dr. Pringle hath observed
good effects from it in the spasmodic Asthma. When it is
taken as a medicine, it ought to be made very strong, & drunk
without Sugar or Cream. I have however universally observed it
to be hurtful in the Dyspepsia or in Indigestions & flatulencies,
& frequently even it produces very disagreeable effects in these
kinds of constitutions. — I attribute the great variety of Nervous
disorders, which we are so much more subject to than our forefa-
thers, very much to the free use of Tea & Coffee. It is scarce a
hundred years since they have been introduced into common
use, & within that time there hath certainly been a great
revolution in the Diseases that our constitution is subject to.
Before the introduction of Tea & Coffee, Meat was used in much
greater quantities than it hath been since; we know that
even the Court Ladies in Queen Elizabeth's Time had an allowance
of Meat & Beer for breakfast, we can therefore easily

account for the great variety of putrid diseases & inflamatory diseases that prevailed formerly in comparison of what now take place. But nervous diseases & y. nervous fevers were very uncommon in those days, which now constitute the greater part of the prevailing diseases. But notwithstanding this inconvenience we have certainly benefited by the change. It is also highly probable that Tea & Coffee have contributed considerably to the refinement of manners that hath taken place in the last Century. They have undoubtedly created a more free & general intercourse between the sexes, which hath tended greatly to polish the one & to improve the other, & have had no small share in abolishing the ferocity of manners which prevailed heretofore.—

Fetid Gums. Before we treat of these, it will not be improper to premise some thing on the Disorders in which they are generally indicated & employed. The principal one of these is ye hysteric disease, which serves almost as a general name for ye greater part of nervous diseases. This deserves a ~~most~~ particular attention on acct. of its frequency, ye its obscure nature & origin; its violence & ye difficulty of distinguishing as well as curing ye disease. There is no disorder which puts on such various & different appearances & frequently even appear altogether opposite. It attacks ye mind as well as body: no part or function of ye system but what is at times affected by it: there scarce exists a disorder but what this will sometimes imitate & counterfeit. — This disease hath been known at all times & in all places: We find descriptions of it in ye earliest productions in physick, tho they are greatly inferior to what they have left us on ye other diseases; probably because Women were chiefly entrusted w. ye care of this disorder, which was supposed to originate in the Uterus; and therefore Physicians were only called upon in terrible & desperate cases. It is but lately that physicians have formed a proper Idea ~~w ye~~ of ye Nature of ye hysteric, We may in general terms define ~~it to be~~ ye disease to be chiefly in affections of the nervous system & particularly in spasmodic convulsive motions of ye alimentary canal: ye & from ye Impetus in the chylopoetic Viscera & ye pneumogastric commune there arise more or less general reactions in ye whole nervous system. It is more peculiar to Women than Men; it is indeed so common & frequent to them, that there are very few who do not at some period or other of their lives experience ye effects of it. It is not however altogether confined to the sex; for Men are sometimes afflicted with the real hysteric disease, altogether different from ye hypochondriac, which hath been supposed to be of ye same Nature, but distinguished by attacking Men only: but We shall presently shew that there is a real & very evident distinction between the two diseases —

But tho this disease is not strictly speaking confined to ye female sex; and tho most if not every woman, is more or less subject to it; yet they are not all equally liable to be affected with it: but particularly those only ~~who have~~ of a peculiar habit, temperament or idiosyncrasie: who live in a certain manner & when they arrive at a particular period of life. In some again it is brought on by slighter causes than in others, whilst these again are more severely affected. Some it attacks on ye most trivial occasions & from ye slightest causes; whilst others are not affected in a hysterical paroxysm ~~upon the most~~ from very considerable causes.

Those who are naturally inclined to hysteric complaints & are frequently & violently attacked with this disease have generally a great sensibility & mobility both of body & mind: they have an exquisite sense of pleasure & pain; they enjoy a lively imagination, are of a joyous disposition & of a slight fickle temper: pusillanimous & impatient of delay: prone to various & sudden passions & affections of ye mind; many of them have also a particular Idiosyncrasie; whence they are ~~sate~~ disagreeably affected from certain aliments, odours & tastes, that are grateful to most other persons. It frequently attacks those who are of a lax, soft, tender & weak habit of body; & those also who are of an elegant ~~form~~ delicate & graceful form; who have a large arterious system & of a sanguineous temp; who have ~~large~~ copious menstruations, & subject to hæmorrhages.

Further: those who lead an idle indolent life, live high & exercise little; those who have been afflicted with grief, fears, sollicitude, tedious diseases, profuse hæmorrhages, or other large evacuations debilitating ye body. It is however by no means confined to these & ye more delicate of ye sex; for it is not only frequent, but very violent amongst the Vulgar; who have a strong macculine habit of body & are used to hard labour. Unmarried Women, young Widows & barren Wives are more liable to it than others; also those who are subject to hæmorrhages from ye uterus, or ~~of~~ labour under a chlorosis. Tho it also attacks pregnant Women & indeed persons of all ages, Ranks & situations in life.

Some Women & even whole families have a hereditary disposition to ye disease; in these some particular fault & constitution that pre-disposes to ye disorder is derived from ye parents & entailed on the children — Those who are of a sanguineous habit, robust & manly, & prone to affections of ye mind are generally ~~affli~~ attached with a hysterical convulsive suffocation, & violent symptoms extending over ye greater part or whole system; whilst those of a phlegmatic habit labouring under a chlorosis; & ye weaker & more delicate Women are attacked with faintings, & more local or topical affections — It is most common & frequent from ye age of puberty to ye total cessation of ye Menstrual evacuation: tho it is by no means confined to these limits; for I have observed it in Girls of 8 or 10 years old, long before there was any tendency to the Menses; & also in Women long after the Menses had ceased & even after they arrived at ye 60th or 70th year. — It also often attacks Women ~~about~~ at ye period when they Menses are about to cease altogether: also pregnant & lying in Women, particularly after difficult labour. The causes which serve as occasional in those pre-disposed to this disease are as numerous as they are various: In particular however: sudden & violent commotions of the mind, & mental affections in general: amongst these none is more apt to bring on an hysteric paroxysm than violent anger; great terror or sudden consternation. Objects that appear horrid to ye ~~sight~~ eyes; the sight of persons who are under a hysteric fit or other convulsive motions: an unexpected message of sad or unfortunate tidings: an imprudent ~~relation~~ narration of unforeseen, distressing & terrible accidents: even the recollection of any thing ye excited violent commotions of ye mind; nay frightful dreams have sometimes brought on ye disease — Some are affected by ye odour of particular substances, especially perfumes, as Musk, Roses &c. others by the noise & impression of particular sounds: Hoffman & Whytt have instances of Women being so greatly affected by strong light as to be immediately thrown into an hysterical paroxysm — Further: The retention or suppression of

any natural or customary evacuation; but particularly ye sudden cessation of ye Lochia or Menses from cold & moisture. Obstructed perspiration, costiveness, & other causes of the same kind are deservedly ranked under this head. Further. Profuse hemorrhages of ye Menses, Lochia, & immoderate looseness likewise give occasion to this disease. — Further: ~~Cold~~ Taking cold, especially when ye body is warm & fatigued with labour or watching; plethora, debility & emaciation; expensive labour; long continued watching; encreased circulation; acute disease; pregnancy; errors either in ye quantity or quality of drink & aliment; cardialgia, fasting, warm drinks, flatulent food; or aliment that is hurtful from ye particular Idiosyncrasies of ye patient as fish, milk &c. strong cathartics; ye retrocession of rheumatic or arthritic affection & miliary eruptions: ye fluor albus; ~~sharp~~ and ulcerous matter lodged in a particular part of ye system; scirrhi & cancers particularly of ye uterus: a prolapsus uteri, violent pain; & lastly many other things of an ~~irritable~~ irritating nature; even some which would scarce be suspected of such a power; & finally what we can occasion commotions in ye nervous system, may be ranked under ye occasional causes of this disease — It often also happens that we can scarce discover any exciting cause; especially if the disease hath returned frequently, or by repeated attacks & paroxysms become periodical — We are next to give the history & symptoms of the disease; not indeed in a regular & altogether compleat manner; for this is rept to be an Impossibility: for the symptoms are almost as numerous; nor do they observe a certain rule or type; the disease scarce we appear alike in two persons; and it will often appear differently at diff. times in ye same person: Generally however, sometime before the disease is completely formed, especially if the attack is not very sudden, ye patient yawns & stretches; there is a heaviness, lassitude & languor in the diff. members of the body, as well as mind; the Limbs shake; the strength fails; the thoughts ramble; dimness of sight, fear & lowness of spirits and pain attack the patient: there is a sensation of cold & chilliness ye num from one part to ye other, which is succeeded by sudden flushes

—

of heat particularly in ye forehead, cheeks, temples, loins & extremities: the counte-
nance is either pale or flushed; or is alternately affected with both; the pains
differ ~~both~~ in their part they attack, specific & severity; they ~~usually~~ generally
~~some~~ occupy the back & some part of ye head; the blood is buffed as Water
& made in large quantity. ~~There is a~~ motion is perceived, at first only ob-
scurely, as if a tumor or ball in ye lower belly was moving backwards &
forwards, often as if it tended towards the diaphragm & supper parts: In its
progress the ball appears to grow larger & softer in a very singular
manner untill it arrives at ye pit of the stomach; frequently however it
decreases again & is contracted into a harder lump; occasioning various
symptoms as it advances upwards. Some parts of the abdomen become
painful & palpitate; and hard, tense & prominent; or are retracted with considerable
violence, particularly about the Navel. There is rumbling noise in the Intestines;
& ye sphincter of ye rectum is often so contracted that no air can pass, nor
a glyster pipe be committed when a Glyster is to be exercised. There is great
anxiety & oppression at ye precordia; there is a sense of tightness and
contraction at ye pit of ye stomach; or the epigastric region feels as if it
were distended with great violence. The respiration is difficult anxious & small;
the pulse is hard, small, intermitting, trembling & unequal. The heart often trem-
bles as if it were shaken; and a dry convulsive cough sometimes accompanies
ye disease. These symptoms come on with more or less violence and are often
accompanied with, or succeeded by, ~~by~~ a ringing noise in the Ears; a sparkling before ye
Eyes; giddiness & heaviness of all ye senses; at length there is a slight fainting; or
ye patient is overwhelmed with sleep; or lies in a stupid soporous state. Often
however, before the Senses are impaired, or ye patient falls into a deep sleep,
ye ball rises into the throat; or even sometimes first appears there in a
tumor of ye fauces; ye respiration becomes short, quick & laborious with great
anxiety; and ~~the throat~~ there constriction is so great, as if the fauces were

drawn together by a cord or bandage, threatning immediate suffocation. The pulse & breathing become exceedingly low, small & slow; sometimes indeed it becomes so imperceptible, that it appears altogether abolished; the Voice is totally lost; the countenance becomes livid & swelled; the ~~sight is impeded~~ eyes grow dim & all the senses are clouded; at length y. patient sinks away into a profound sleep; during which she is agitated w. convulsive motions; or lies immoveable as if thunderstruck. After a certain space of time, when y. paroxysm begins to remit, y. sleep becomes more placid, from which they recover w. repeated sighing slow & deep sighs; rumbling in y. belly, w. y. discharge of flatulencies, & a copious evacuation from y. vagina; the breast open; y. pulse becomes stronger, fuller, y. respiration freer; y. heat & colour animated, & the senses & judgment return w. y. Voice. After y. paroxysm is gone off, they freely complain of a heaviness & pain in y. head, & sometime remain depressed, inferior, tired & stupid as if they were bruised. Besides the symptoms just enumerated, y. disease is often accompanied w. convulsions y. and show or less general. In some y. hands & extremities only are agitated; in others y. whole body is convulsed; y. patients violently and forcedly into various positions; they exert unusual strength & almost miraculous modes of movements; sometimes they jump or tremble whilst their ideas are deranged, & y. speech incoherent; they are twisted round w. y. utmost velocity, & distorted in a thousand diff. ways: And generally retain some degree of sense; they see, hear & know, & upon y. remission of y. paroxysm they commonly recollect every thing y. passed during y. fit: Sometimes however they are unexpectedly seized w. convulsions, resembling an Epilepsy & fall down suddenly w. the loss of their reason & senses. These are freqtly preceded by a disagreeable sensation, as if a cold air, arising in y. tube, feet or limbs, and advancing to y. head, where they are immediately affected in y. manner just related. In these the convulsions are constant; whilst

* We might be led to conjecture that the cases related were mere inventions, but a case recorded in a very late publication renders them probable. A Lady, supposed to be dead was by a sudden jolt of ye hearse roused out of ye agonies, fainting, and to ye utter astonishment of her husband, who was attending ye funeral, revived & lived to see him actually buried —

in the former case they intermit & come on only at times. After a certain time the motions cease altogether; ye patient falls into a sleep resembling ye apoplectic; at length they recover, but are ignorant of what has passed from the time they were first seized. — Some, particularly those who have frequently been convulsed, are attached w. a Paraplegia, Semiplegia or paralysis of a particular part, & sometimes w. a catalepsis. In others again the mind is more ~~& sometimes~~ affected than ye body: the tongue is moved in various ways as of a person chattering, but without any order or connexion in the speech; they sculler & speak nonsense & things foreign to the purpose; they beat the breast w. ye hands, as if the part was painful; they are agitated w. dreadful Visions, & ye furor uterinus; they are borne away by dif. opposite passions of ye mind, w. the unexpected & quick succession of rage, fear, hatred, Love, hope, despair &c; with as little reason & equally quick they change from the most distressing cries & lamentations into immoderate laughter & are dissolved in fools mirth. Some are seized unexpectedly w. ~~an~~ affections of ye brain, giddiness & ye senses are impaired; the sight grows dim; images of various things present themselves; as flies or shining images that ~~are~~ turn round & constantly engage the attention & fix ye eyes; ye patient either lies in a comatose or apoplectic state; or there is a sudden & great abolition of strength with a trembling & fluttering alg. heart, coldness of ye extremities and syncope. The Mind, Senses & voluntary motions cease acting; ye pulse & respiration are diminished in a thousand ways; & sometimes seem to disappear altogether. They lay immoveable & in all appearance dead. There are even instances of persons having continued in this state for one or more days, ~~and~~ untill they were laid out for interment; nay we have one or two cases of persons who were actually buried & ~~had~~ came to life again in the Vault ~~when~~ they perished most miserably.

Sometimes rigors & violent trembling, or a great coldness of ye extremities & torpor attack ye patient; sometimes a biting cold & a most severe pain seize on some part of ye back, loins or os coccygis; or wandering pains with adfrictions, as if the part were tied ~~round~~ tightly w. a cord or bandage infest the Woman. It is not seldom that there is a severe pain of tense; ~~obtuse~~ dull, or also cutting acute pain of ye head; which sometimes at one time fixed & continued; at another wandering, vague & often periodical; sometimes they attack one side of the head, at other times, another side; at times they are extremely violent in the forehead, crown & whole head; at other times they seize on a small part & feel as if a Nail was driven there, whence the name of Cephalea hysterica. To these are generally added a fulness in ye head; singing in ye ears; giddiness, & in ye parts affected or adjacent, an intolerable sensation of heat or cold, with violent pulsations of ye arteries; & sometimes also a Nausea & vomiting of porraceous bile. Sometimes there are excruciating pains of the teeth & Jaw, with a copious discharge of saliva attended with a fetid breath. Sometimes there are acid, bilious, sulphureous eructations, of diff.t smells, and so extremely acid as to set ye teeth on edge, w.h cardalgia, heartburn, borborygmi, swelling of ye stomach & various kinds of pains. Violent pains in diff.t parts of ye abdomen; sometimes in ye pit of the stomach, & in ye region of ye colon; sometimes resembling colic & ye iliac passion w.h constant endeavours to vomiting of a green matter, but often of diff.t colours: some are tormented w.h incessant & excessive vomiting. Some are attacked w.h a diarrhoea, tenesmus, or cholera w.h ends in a Jaundice: sometimes there is a constant desire to make Water with nephritic pains; but the Urine is suppressed, or is evacuated only in drops & w.h great heat. The colour & sediment also vary greatly in the different stages of ye disease

From this history of Hysteria, it is evident ~~that~~ it is far from being ye imaginary complaint which many are too apt to conceive it to be; on the contrary it is one of the most distressing diseases ye comes under the care of the Physician, and I have occasionally met with it ~~when~~ to a degree ye rendered life a burden to the afflicted patient, & when it baffled ye united efforts of ye most various experienced Physicians.

In some the disease returns periodically w.th a dry convulsive cough, or spasmodic asthma. Others again have no other symptoms of the disease but that they at times feel a lightness & anxiety in y.e precordia, or palpitations of y.e heart, with dizziness or slight faintings fits. The symptoms of y.e hysteric disease are also frequently complicated w.th other disorders; and indeed it commonly happens that when a person subject to hysterics is attacked with some other disease, even of a very different nature, some symptoms of this will still attend her: and therefore it puts on such various appearances, & as to require often very diff.t methods of treatment. Whatever form or appearance y.e disease assumes, it always of diff.t duration, w.th much we be uncertain. Sometimes y.e paroxysm continues only for a few minutes; at other times for hours, and even days. But y.e more violent general y.e attack, the sooner it generally ceases; whilst the slighter attacks, where that only affect a particular part, generally continue a considerable time. In some the disease is not very apt to return, which however depends much on y.e habit & disposition of y.e body & y.e occasional causes. In general however it returns upon y.e slightest occasions & at uncertain periods: y.e paroxysms in general appear diff.t from each other. Sometimes y.e paroxysms succeed each other very quickly, & a Woman may have several of them in a day: it also continues to attack y.e person for a considerable length of time, and particularly at y.e menstrual period. Sometimes on the other, being frequently it becomes in a manner perpetual; frequently periodical, & then it is almost constantly attended w.th y.e same symptoms. During the intervals of y.e paroxysms, y.e greater part are free from any complaint & enjoy perfect health. Others again, particularly those advanced in life, or feeble persons & such who have experienced freq.t attacks of y.e disease y.e have continued long assunder, are even during y.e intervals, afflicted w.th headaches, indigestions, credities, watchfulness, dreams, the nightmare and are attacked upon y.e slightest occasions: or sometimes it lays y.e foundation of diseases y.e are more fatal in their consequences than y.e hysterics ||

Most Authors are of opinion that y. hysteria & hypochondriasis are y. same disease, and to be called indiscriminately by y. one or other name, as they occur in diff. sexes. But tho these affections agree in many particulars, & have several symptoms in common w. each other, yet there are still more which are peculiar to & characteristic of each disease, and sufficiently shew us that there is a real difference between y. two disorders; and y. they can never be considered as species of y. same disease. The description of y. one & which we have just given, compared w. y. symptoms which are by dy. them known by y. name of hypochondriac, & were supposed to proceed from y. atra bilis, and y. particular characteristic symptoms of y. hysteric disease, will enable us to draw proper limits between the two, & to shew in what y. difference consists. In y. first place the persons ~~who~~ subject to these diseases, differ altogether in habit & temperament. The hypochondriac differs from y. hysteric disease altogether in this that in general it attacks y. male sex. Tho many of the wife which are called hypochondriac in Men, are in fact hysterical; and again many men called hysterical in Wo, men are really hypochondriac. The latter disease attacks particularly persons of a melancholic disposition & tempt.; of a dry, rigid & lean habit; of a dark countenance & aspect w. rough, black curled hair: the Veins are large & turgid; they persons are generally subject to costiveness & y. piles; & are in general of a tranquil & equal mind, ~~w~~ sedate, constant & reserved. It also differs widely from y. hysteric in other respects; it attacks people in y. decline of life, advances by slow steps; but continues constant & perpetual for a long time, for months & even years, by day & by night without any intervals, during which they patient feels himself altogether easy & free from y. disease; & is seldom radically cured. From what we said above it is evident how different they are situated in the hysteric disease which chiefly attacks Women in y. prime of life, of a sanguineous tempt. w. great mobility of y. Nerves & mobility of y. system: where y. attacks are

violent & sudden, often taking away all sense & motion; but and soon over & perhaps never to return again: or when at least y. patient during y. intervals, between the paroxysms enjoy an uninterrupted state of health. Some symptoms indeed of both disorders are exactly similar: thus y. rising and the various affections in y. alimentary canal, distensions by wind, air, acid eructations, crudities &c. These however are by no means sufficient to prove them y. same disease, for they also occur in other diseases, as y. chlorosis, suppression of y. menses, gout &c. But there is also some difference in y. manner of these affections between y. hysteric & hypochondriacs: In y. former y. symptoms are more violent, and more purely spasmodic or convulsive; y. effects and more extended and sometimes shew themselves over y. whole system. In y. hypochondriac disease y. symptoms are less violent & confined to y. alimentary canal & y. spasmodic motions are very seldom if ever extended beyond y. stomach. The ~~ball~~ moveable ball & constriction of y. fauces which in a manner characterize y. hysteric disease, never occur in the other, nor are the abdominal muscles by y. force of y. spasms contracted; nor is the navel retracted as in y. hysteric disease. But ~~besides~~ to what ~~is~~ has been already said which is sufficient to distinguish y. two diseases, we may add y. particular habit or frame of mind attending each disease: hypochondriac persons are in early placed & always melancholy, sad, anxious, fearful, suspicious, diffident, and always apprehensive of or forebode to themselves some ill fortune; they give up all hopes of recovery of health; they will even suspect their most approved friends; they loath the world & every thing in it; fond of solitude & fly society; their mind is both day & night intent on one particular object; from which it is continually diverted by various dreams & troubled with vain fears & terrors; but when it can be drawn off from this, the mind appears sound and reasonable. great judgment on other things: they even appear to possess great judgment, prudence, sense & a great depth of reasoning. A hypochondriac therefore appears to differ from a melancholy person in no other respect, but that his disorder is accompanied w. various affections of y. alimentary canal; & indeed it is

of seen to find this disease to change into a real Melancholy & sometimes Mania.
These are the principal symptoms of y. hypochondriacis, and are very
different from what we observe in y. hysteric disease. For the third is in
this at times a delirious state of y. mind, w. sadness, fearfulness & even y. highest
kind of despair; they very seldom however last long, but are soon succeeded
by Joy, Mirth, laughing &c. The Mind seldom continues long intent upon one
subject; but the transition is very quick from one thing to another; the succeeding
alternations are various, sudden & contrary & demonstrate y. different
affections of y. mind: when the paroxysm is over, the patient enjoys a sound
mind & a healthy constitution.

Both the diseases may however be complicated in the same person & the one
may be changed into the other: but the hysteric ~~particularly~~ especially is frequently
at age & most particularly in an advanced stage converted into the
hypochondriac disease. Tho we observed above that hysterical affec-
tions often proceed from a suppression of y. Menses, repletion of various excre-
ments & similar causes; yet it is very possible y. pains in y. head; y. various
pollutions in y. alimentary canal of flatulencies, acidities, cardialgia, spasmodic
pains in the intestines & other symptoms which we enumerated, y. also fre-
quently occur in the Chlorosis, Asthmatic &c. when they attack the females
and been too often taken for & ~~confounded~~ indiscriminately confounded w.
the disease. Which amongst other reasons probably occasioned Physicians
to consider this disease as very frequent, inconstant & various in its appearance

In my last Lecture I treated of the History & Causes of the hysterics: the best method of relieving the disease will be the subject of ye present hour. We shall however premise, that tho this disease appears frequently dreadful, yet that ye fear is generally greater than the danger; and that ye paroxysm seldom proves fatal. It sometimes however happens that ye disease ends fatally: for some are seized w. an apoplexy, other with great & long faintings or lard by ye most severe convulsions deprived of life. The danger is to be estimated by ye manner in which ye paroxysm came on; by ye strength of ye patient, ye severity, number and duration of the symptoms; but particularly by ye manner in which the vital functions are affected; for ye danger is generally in proportion to the depred that they suffer. But tho there be little immediate danger in the paroxysm, yet the disease is extremely apt to return on ye slightest occasion, in ye end becomes tedious, periodical, or is often changed into ye epilepsy: It is but too often difficult to cure, is very obstinate & frequently continues to afflict the patient untill ye day of his death, notwithstanding ye utmost efforts of ye physician: Upon ye repeated & severe attacks of ye disease the strength of ye patient is impaired; all the functions, but particularly ye mind are affected and vitiated in various ways, which is a fruitful source of innumerable evils. The different changes ye body undergoes by age, manner of living &c. sometimes diminish ye violence of ye disease & render it less frequent, sometimes remove it entirely. Where the spread is possible to the disease is great & hereditary; or arises from fixed habitual causes; ye disorder hath continued to return for a long time; hath become periodical or even degenerated into an epilepsy; or if it is combined w. obstinate obstructions of ye Menses; ye hypochondriac disease or other disorders; the more of these causes concur the greater ye difficulty in curing the hysterics: But if ye patient be young, ye disease recent, or hath arisen from affections of ye Mind or a suppression of the Menses; or finally the fever had symptoms that accompany ye disease, the easier & quicker may we hope to perform a Cure

Asa fœtida. This Gum hath been a long time in use & employed in various diseases. It is a good antispasmodic, possessing at the same time a stimulant quality, & occasionally proves laxative, diaphoretic & also promotes expectoration. In ye Hysteria it is universally employed; it may be administered in substance from ten to 15 grains for a dose & repeated frequently; it likewise yields its virtues to Spirit & water. — Spirit perhaps ye properest menstruum; but on account of ye heat quality of ye Spirit, we are frequently limited in ye dose of the Tincture; ~~it likewise~~ and as water sufficiently extracts its virtues & is not liable to those exceptions, we may administer it dissolved in water. — I think I have seen effects from Asafœtida in solution, which I scarce ever experienced from it in substance; it is highly probable that when ye stomach is much disordered & ye power of digestion weakened, asafœtida in substance may sometimes remain for a considerable time in ye organ before it is dissolved & its virtues extracted, of course our expectations must be disappointed. I was some years ago consulted by a practitioner near this City in a case of dyspepsia attended with a considerable distension of ye abdomen by flatulence, which continued for some time & resisted a variety of remedies — Amongst others ye Asafœtida had been administered in pills in considerable quantities, but had not produced ye least favourable alteration. I proposed its being given in Solution with water & to be taken repeatedly & in large doses: this answered very expectation & in a short time entirely removed ye distention

Our indications of cure then are 3 points: 1. To remove or guard against occasional causes: 2. To mitigate shorten or altogether relieve the paroxysm, & to guard against ye consequences apt to ensue from a fit of ye hysterics: 3. To prevent ye return of ye paroxysm, by avoiding every thing that may give rise to the disease, correcting ye predisposition to the disorder, & restoring the proper tone & strength to ye whole system. Here with regard to our first indication we observe that occasional causes may be extremely various, & are either transitory, and subsist no longer after ye paroxysm is formed such as passions of ye Mind &c. or they are constant & inherent in ye body as a peculiar habit of ye Nerves, flesh & blood &c: for this reason they also require very different & even opposite method of treatment; which will be more properly considered under our third head. We shall therefore proceed to the second Indication. When the symptoms of a paroxysm are slight, there is little or no occasion for Medicines: and if ye attack is not violent, nor likely to continue long, it is perhaps full as well to not to use any remedies. But if ye accession is severe, & adapts of its increasing, or if worrying ye patient by continuing too long, we must endeavour to afford her ye speediest relief. If ye patient is of a plethoric habit; or ye disease is brought on by cold, or occasioned by a suppression of the Menses, particularly on a sudden, bleeding will often afford instantaneous relief: this is also indicated whenever there are symptoms of ye blood being obstructed or stagnating in the head & in the lungs; when the respiration is difficult & short, the countenance livid, or there are signs of an approaching Coma or Apoplexy. When any of these symptoms threaten we should not hesitate about taking away some blood, tho the pulse be small & vibrating; for by judicious, & moderate bleeding the pulse will become both stronger & fuller. We should however never order it in this disease, but in ye utmost caution & circumspection for many eminent physicians have observed that unnecessary bleeding hath been attended with ye worst of consequences, and even destroyed the patient: it is indeed at best but a palliative, affording only a temporary relief. If a small quantity of blood only is to be taken away,

I have observed similar effects from it on other occasions, & I therefore generally, & especially if I wish to produce a sudden effect, prescribe it in a Solution; half an ounce of ye gum to be dissolved in 6 or 8 ounces of water of which a large table Spoonful is to be taken at one, & to be repeated as circumstances may require.— In flatulent spasmodic colics, a Solution of Asafetida administered by way of glyster will often produce considerable & immediate effects. Two drachms of Asa fetida may be given at a time in this way, & if the pain is very violent, we may 50 or 60 drops of Laudanum to the glyster, not only to ease the pain, but to cause ye glyster to be retained. Asa fetida hath likewise been recommended in fevers & particularly in ye Nervous fever, & I am informed it was some years ago used with success in ye american military Hospitals in this disorder.— I imagine however that there are antispasmodics, more powerful in their effects & more certain in their operation, in these disorders at least, than Asa fetida.— I find that it was indeed the practice to combine Opium, & not in small doses, with the asafetida it is therefore more than probable that ye effect was in a great measure, if not altogether, produced by ye opium. Asa fetida hath likewise been recommended, & I have repeatedly prescribed it in the Catarrhus senilis, on account of its diaphoretic virtues, for it hath been observed

or a particular symptom requires the loss of blood, it is much safer & pretty
answers the purpose better, to apply leeches or cupping glasses w.th scarification.
As to what relates to Medicines we may in general observe; that if the disease
be accompanied w.th spasmodic convulsive motions, or with a considerable
perturbation of y.e mind & delirium, sedative & antispasmodic medicines,
particularly of y.e volatile kind, are indicated. If it is attended w.th a syncope or
Catalepsis, or with a coma, & there is at y.e same time an abolition of the
senses & voluntary motions; we may with prudence & caution administer
what are generally called nervous meds, or the proper antispasmodics & such
as possess a considerable stimulating quality, by which the sensation & motion
may be excited. The weaker remedies are always to be tried in every case to be first
tried; & when these fail we may have recourse to y.e more powerful w.th
more confidence & better expectation of success: heating & acrid & y.e more violent
stimulants should always be avoided; for they have been observed to increase
the anxiety & precordia, render the respiration more difficult, or to increase
& even a fresh excite convulsive & spasmodic symptoms. The remedies y.e are
indicated should as much as possible be administered in y.e beginning of the
paroxysm; for by the timely exhibition of them all y.e impending evils are
alleviated; & y.e continuance as well as increase of the symptoms is prevented.
We should first endeavour to recover the patient out of y.e fit by external appli-
cations: for this purpose various methods & remedies are generally employed:
applying to the Nose volatile salts & drops, Vinegar & various fetids: the smoke
of rag, feathers, burnt feathers, leather, bones; y.e smoke of tobacco & Assafoetida.
y.e abdomen & other parts of y.e body are rubbed w.th woolen cloths moistened w.th
a solution of camphor, Musk, fetids & narcotics. Emollient ~~Cataplasms~~ Fomen-
tations, fetid Cataplasms, aromatic plasters & anodyne Glysters, together w.th
pediluvia have often given great relief. Cold Water thrown into y.e face
& breast is frequently & daily used w.th success when a syncope is, or hath actually taken
place. But if the disorder does not yield to any or all of these remedies

that this remedy hath a peculiar virtue to encrease ye insensible perspiration, & that no medicine hitherto discovered possesses this quality in a degree superior or perhaps equal to the fœtida. — The catarrhus senilis is a disorder peculiar to persons advanced in Life, & few old people are entirely free from it. By age the different secretions are diminished, but perhaps none suffers such a diminution as the insensible perspiration, from ye organs of perspiration becoming obstructed & from a more languid circulation in ye ultimate or smaller branches of the blood vessels. Hence it happens that the humours formerly secreted & excreted by the Skin, are deposited upon the Lungs & give rise to this disorder, called ye catarrhus senilis, which is nothing else than a defluxion of humours on ye breast giving rise to a very troublesome cough by which the humours deposited are thrown off by expectoration; & as often as a new collection takes place the cough is again excited. This happens particularly in ye morning, for during sleep a considerable deposition takes place; & this reconciles us with the reason why many old people are so troubled for an hour or two every morning with coughing, until, to use their own expression, they have cleared their pipes. The only effectual method to relieve this complaint, for it perhaps never admits of a perfect cure, is to administer such remedies as will encrease the insensible perspiration; & for this purpose the fœtida hath been found ye most certain & safe medicine. Garlick as it agrees in sensible qualities with the fœtida & possesses virtues similar to it, hath been frequently employed for the same purpose & with good effects. — It is indeed a remedy very generally used for this complaint, as a domestic medicine. Small doses of Ipecacuanha will serve the same indication; wearing flannel next the Skin; moderate friction generally applied, by tending to ye same purpose, will likewise contribute their share in relieving ye complaint. —

particularly when the patient is in a syncope, deprived both of sensation & motion, especially if she hath continued for a considerable time, we must have recourse to strong sternutatories, Vesicatories, Cataplasms, Glysters & remedies of y. acrid kind; ~~[illegible]~~ it is also in such cases sometimes ~~[illegible]~~ difficult to judge whether y. person be really dead or not, & therefore some advise to make a loud cries close to the ear, to blow the strongest sternutatories up into y. Nose; to prick the body in various places w. pointed instruments, or to apply y. actual cautery to the Soles of the feet. These are known very disagreeable & dangerous remedies, & nothing can warrant our employing them, unless things are really come to y. utmost extremity. We should be very cautious how we apply the nose and sternutatories, especially when the Countenance is livid & affected, least from y. sudden concussion a rupture of some blood vessels in the head or lungs be occasioned. In this case we should have recourse to gentler methods, & it will always be found safer & generally most effectual: We may order the gentle & less stimulating cathartics; we should also order the warm bath & at y. same time employ moderate frictions. If any medicines are to be used internally they should be given in solution, as they will then act much quicker & we should add them in sufficient doses. The best & safest for this purpose are opium, camphor, Ether, ~~Sal volat~~ Volatile alkali, & y. various combinations & compositions that may be formed w. y. these several remedies. The dose & choice of the Medicines is only to be regulated by y. disease & habit of y. patient. After the person is removed, the patient should be for some time kept in bed & refreshed by gentle cordial & exhilarating med. by which the body is invigorated & the mind composed ——

The fit being thus removed, we are to be very careful in preventing y. return, by avoiding & counteracting every thing which hath a tendency to increase y. disposition of y. ~~[illegible]~~ body to this disease or may cause on an occasional cause to excite the disorder afresh. But the ~~[illegible]~~ principal indication consists in correcting y. predisposition in the system, particularly the too great sensibility &c

Asa fetida hath likewise been recommended against worms. When I treated of Garlick, I mentioned its effect in destroying of worms & that it was often employed in that intention. Asa fetida possesses not only the taste & smell of Garlick, but in a higher degree & it is therefore probably a good medicine in disorders arising from worms. It hath likewise been esteemed an emenagogue & that it is useful to remove an obstruction of the Menses. As it is an antispasmodic & stimulant, and moreover ~~such~~ possesses a property similar to Aloes of causing an irritation in the rectum, which may be communicated to the Uterus, we may conclude that it may have this effect, tho perhaps not in a degree equal to some other substances that may be employed for this purpose. I have in one or two instances in the course of my practice been obliged to desist from ye use of Asafetida on account of the irritation it produced in the rectum, which was so violent as to bring on a most distressing tenesmus. In Shampfer's History of Japan we have an accurate & elegant description of ye plant which produces ye Asa fetida with the manner of preparing it. He tells us that one drachm of the fresh & newly drawn Asa fetida gives a stronger smell than many pounds of that which is ~~be~~ to be met with in Europe. The Romans in ye luxurious ages, considered Asa fetida as a high sauce for ye meats, and generally rubbed their plates slightly over with it. This custom prevails at this day in China, and it is said that some of our great connoisseurs in eating, conceive that a slight touch of Asa fetida greatly improves the relish of a beefstake, and is no small improvement in the art of Cookery.

The gum ammoniac likewise comes under this class of Medicines; it is a weaker antispasmodic than ye Asafetida; but it hath

of in the primæ viæ & whole nervous system, & in strengthening the body against ye things which ~~used~~ are most apt to affect it: In doing this we effectually & radically cure ye disease. This is chiefly accomplished by a proper regimen & mode of life. This is to be regulated by ye particular habit of ye body; idiosyncrasy of ye patient & ye cause of ye disease: And in general the regimen must be ~~strict~~ more or less strict as ye particular circumstances may require. —— The food should be nourishing, easy of digestion, be taken only in small quantities at a time, but repeated ye oftener. — Hunger & fulness should be carefully avoided: the patient ought to abstain from hard, salted, smoked & all meats stuck as are liable to rancescency & putrescency; likewise from pastry, in ice'd, acescent & flatulent vegetables: Fish & Water fowl are apt to disagree w. many Women, particularly about ye menstrual period, & should therefore be avoided. A Milk Diet, when it agrees w. ye patients stomach, is by most eminent physicians reckoned ye best food; Food & Water w. a small quantity of Spirits, is held ye proper drink. Old Wine, as it is milder, less acescent & flatulent than new, is also an excellent remedy, taken in moderation. Even pure cold water affords us perhaps ye best & cleanest & wholesome drink; it chasens the appetite & particularly promotes the digestion of the aliment. We should prefer a pure, open, dry, heavy & cold air; moderately windy & serene. Warm, confined, & particularly ~~mo~~ damp air, debilitates ye system, & contributes to aggravate consumptive disorders; which is evident in warm rainy countrys. The patient should not confine herself within small & narrow chambers; but if her situation in life permits, live in the country & do the business of a country life. The body should always be clothed in such garments as are adapted to the climate & season, to defend it from ye inclemencies & vicissitudes of the Weather: And when the season requires a change in dress, this should never be sudden but altered by degrees. The person should guard herself against heat & cold, & particularly from sudden transitions to one & ye other; ~~shun~~ shun the hot rays of the meridian Sun, and ye damp exhalations of ye Morning & Evening air; nor should she come into

generally been reckoned a more powerful pectoral & to promote expectoration — For this purpose a watery solution, commonly called Lac ammoniacum, is often prescribed. When our intention is to promote expectoration by gentle stimulus, such as you as y. gum ammoniac affords, that medicine may answer the purpose. But one of the most powerful remedies that come under this class of remedies is the Volatile alkali. — The volatile Salt of Ammoniac & Hartshorn differ in nothing from each other, except that y. latter is generally the least pure, owing to a quantity of empyreumatic oil which generally adheres to it & is apt to give it a disagreeable taste. The volatile alkali is antispasmodic, & which is joined a stimulant quality, & from Dr. Pringle's experiments it appears to be likewise a most powerful antiseptic. It is therefore in a particular manner calculated for the last stage of a nervous Fever, answering every indication that occurs at that period of the disease. I have indeed frequently employed it in the Nervous fever, & often experienced the most favourable effects from it. I generally administer it in boluses of 5 or 6 grains each & repeat them every 2 hours; if the disorder is attended w. Diarrhoea I combine ½ or ¼ grain of opium with each dose; but if the body is costive or the Skin very dry, I generally add ½ grain of Tartar emetic to each bolus. It is necessary to repeat y. medicine frequently for from its great volatility, its effects on the System are transient. The antispasmodic effects of volatile alkali are generally established, as it is a medicine which is now frequently employed in the most violent spasmodic diseases; that it possesses a stimulant quality is evident from its inflaming y. skin

the cold, whilst her body is warm. Exercise can scarcely be sufficiently inculcated & commended for its effects it hath in promoting digestion & decreasing ye action of ye Vessels, quickning ye circulation of ye fluids & expediting all ye different excretions & secretions. it confirms the strength of ye body, encreases its vigour & agility & diminishes the too great sensibility & irritability, and raises the spirits. Moderate walking & riding in a carriage & indeed every species of Exercise is highly useful, but riding on horseback is superior to any other. The patient ought to begin w. moderation & at length encrease it to the most violent. It is most proper in the cooler hours, before Noon & dinner, or ~~after the dye~~ in ye afternoon, when the digestion is performed, but should never be used ~~while the~~ upon a full stomach, or in a moist cold evening air, nor should it be continued untill ye body is fatigued. The exercise should also from time to time be varied, it is much better to undertake long Journeys through different countrys, than to use the same degree of Exercise in one & the same place. For by freqtly shifting the Scene, the mind is constantly entertained with new objects, that entertain & please, whilst ye body is at ye same time considerably affected by it. Long Voyages by sea are also highly useful, on account of ye wholesome & refreshing seabreezes, & ye continual uninterrupted motion of the Vessel. The Sleep should be moderate, & if necessary, obtained by ye use of proper med.; too much sleep however is hurtfull. The patient should not upon rising from table immediately go to bed, nor should she remain too long in her Chamber in the Morning: In warm southerly climates, an indulgence in this respect becomes necessary. The Mind should as much as possible be entertained & kept cheerful by ye society of persons agreeable & friendly to ye patient; every thing that can delight the eye & please the senses should be sought after; whilst ye most violent passions displeasing objects & ~~everything that~~ whatever hath a tendency to engage the mind too much should be avoided, for they encourage the disease, favour ye disposition to it, and always greatly obstruct the cure

if applied in a concentrated state; but it appears as if ye stimulus
from volatile alkali was very much confined to ye part it touched
it is immediately applied, for tho I have administered it on a
variety of occasions & in various disorders I do not recollect its
not quickning ye pulse materially; but on the contrary I have
often known it render the pulse slower & fuller. It therefore
appears probable as if some Medicines, & particularly volatiles, had
ye power of acting as powerful stimulants to ye whole nervous
system, without producing any considerable stimulating effect
on ye System of Bloodvessels. I have indeed in one or two instances
as observed it to occasion a heat or rather burning in the Stomach,
& whenever I found it attended with this effect, I desisted from
using it. This however left but seldom the case. The antiseptic
Virtues of volatile alkali are established by Dr. Pringle's experiments,
who found it one of the most powerful substances in resisting
putrefaction that he employed for ye purpose of making experiments w.
a view of ascertaining ye real virtues of different substances. Before
he made his experiments with it, the opinion was universal that
as it was produced by putrefaction, it likewise was ye cause of
putrescency, & therefore we find that all ye Physicians who
spoke of it before Dr. Pringle, always considered it as septic
& that it brought on a dissolved state of the fluids. This opinion
on continues indeed to prevail in some measure, as it is dif-
ficult to get the better of long established prejudices. But
opinion ought never to be put in opposition to positive ex-
periment, & I have therefore never hesitated to administer it
in ye stage of ye nervous fever when a septic tendency begin

The Natural & habitual functions & secretions of y. body require every particular attention; ~~especially~~ we should especially take care to keep the body regular & y. Menses ~~in~~ to their proper periods. Every thing that hath a tendency to weaken the body, should be studiously avoided. It is sometimes necessary to evacuate the Contents of y. Stomach & Intestines by a gentle emetic or cathartic, before we give ~~to~~ any other medicine peculiarly adapted to cure the disease. But tho it is proper to keep the body loose, this should as much as possible be done by a proper regimen, or the short gentle laxatives; the stronger cathartics are always of a doubtful nature in this disease. When the mobility of the System is accompanied with a sanguineous Temp.t inclining to hemorrhages, the Diet should be thinner & lower than in others. In those also in which a fulness of the body seems to favour y. return of the disease, or it becomes more violent about y. usual period of y. menses, & particularly if these do not flow sufficiently or are altogether suppressed; bleeding will sometimes give relief. But I must observe again that ~~the~~ we in this disease we should also ~~are~~ take ~~care~~ blood sparingly & cautiously; least the patient faints or a new paroxysm is brought on. ~~the~~ ~~Repeated~~ bleedings, especially if copious, debilitate y. body, favour the generation of plethora, fix the disorder more inveterately in the y. system, and expose the patient to more frequent & severer returns of y. disease. We have particularly 3 classes of remedies that are useful in this disease by diminishing the so great sensibility & mobility of y. disease. The first & second comprehend Narcotic & Antispasmodic medicines; under the third class we reckon particularly adstringents, or such Med.s as from their known effect on the System are called tonic & roborants. The former act quickly on y. System, but their effects are transitory; the leaves the body weak & y. mind languid & dispirited; in general therefore they only serve to palliate y. disease. The radical cure of the disease depends greatly on the proper use of tonic med.s. In the mean time the former are often very necessary, when the paroxysms

to prevail, & as I before observed, with evident advantage. It is likewise at this period of ye disease that little or no acidity takes place in the Stomach & the volatile alkali is not so readily neutralized, but may extend its antiseptic with its antispasmodic effects. But its use is not confined to ye nervous fever; but it may be employed in the last stage of inflamatory fevers, & even in a pleurisy & peripneumony, when the powers of Life begin to sink, the expectoration becomes difficult & ye breathing laborious from a debility in the Pipes of the Lungs to throw off the mucus. Under these circumstances I administer the volatile alkali freely & with as much if not more success than any other remedy I ever employed in similar circumstances. — In spasmodic affections of the Stomach & Intestines, with or without flatulencies, the volatile alkali affords us a most powerful & efficacious medicine; if there is violent pain, a proper quantity of opium may be combined with it, & I do not know a more certain & quick remedy in complaints of this kind than this combination. If ye disease arises from acidity in ye Stomach, indigestion, debility or irritation, this medicine as a stimulant, antispasmodic & when combined w. Opium, sedative, answers every indication — In a wandering gout & where there is danger of its fixing either on the Stomach or bowels; the volatile alkali given internally & Sinapisms applied externally to ye Ankles or soles of the feet & giving it cordial spirituous drinks, for instance ye most generous madeira wine, or even good brandy in moderate quantity, are the remedies on which we place our greatest dependence, & if these fail, we can entertain but slender hopes of recovery —

return often & succeed each other very quick: they allaye diminish y. violence of y. disease & give us time to have recourse to Corroborants, by which we guard the body against future attacks. And tho in general Sedatives & Antispasmodics only act by lessening the violence of the symptoms, yet they sometimes in particular instances, will remove the disorder radically. This is particularly the case when there is too great mobility, not accompanied with debility or any other complication: in such cases sedatives will be attended w. remarkably good effects. They should be given at certain intervals; & where y. disease returns periodically, a short time before y. fit is expected; by which this is generally put off for the time & if this method be long enough continued y. relapse is totally prevented: of which you have several instances in Dr Whytt's Treatise on Nervous Diseases.

Of Sedatives Opium deserves to be mentioned in y. first place; we explained its usefulness in all Spasmodic diseases, when under y. head of Sedatives. We shall only make one observation here, that with regard to y. propriety of its use in these cases. Most Physicians are of opinion that it is a precarious remedy in these disorders: for as it has a tendency to costiveness, and after its operation hath ceased, leaves y. body languid & y. spirits depressed: as by y. long continued use of it, y. body is emaciated, but y. chylopoetic viscera in particular are debilitated & y. every faculties of y. mind impaired; they conclude that it must aggravate the disease & it would therefore be more prudent to abstain from its use. These objections however seem to have carried more weight, than what they really deserve: these ill effects would probably attend the use of Opium, if we did not alg. same time order such a regimen & course of Medicines as would sufficiently counteract the evil tendency of the Opium. It is undoubtedly often of singular service in these cases, and produces more sudden & considerable effects than any other remedy ——

Castor is employed in the same intention & often indeed combined with Asafetida — The combination I think improper, for I have no idea that ye virtues of either are improved by it, & it only makes ye dose larger & of course more nauseous to ye patient. — I have not often employed it, as I commonly make it a rule to prescribe the most powerful medicine to answer ye particular indication, & therefore seldom combine medicines of similar virtues, as no advantage can possibly be obtained by such a composition — When I have recommended Castor it hath been when ye Patient was particularly averse to Asafetida, & then I ordered it in doses of grs xv to xx. — & found it produce effects similar to Asafetida, tho less certain —

I am under the same difficulty with respect to Musk, as from ye high price of ye medicine & its being but seldom to be procured genuine, I have not so often employed it as I otherwise would have done — I have used it with success in one case of a convulsive hiccough, in doses of 15 grains — Musk & Castor constitute the chinese medicine for the Hydrophobia, which was once thought specific for the cure of that disease; but without foundation — Musk is by most & not all Physicians considered as a most powerful antispasmodic, but few I believe speak from any experience themselves have had of it — The Fleum Animale, is by ye german Practitioners particularly considered as a very powerful antispasmodic & recommended for ye cure of epilepsy on that principle: it is not in use here & therefore not to be had, however deirous I might be of ~~me giving~~ in a legal

of Antispasmodics the Volatile alkaline Salts & spirits: empyreumatic oils; Ether Musk & Camphor, fetid Gums &c. deserve the first place of the advantages & disadvantages of these we shall treat in our next Lecture, and not interrupt ye. present subject. — These are chiefly used ~~before~~ immediately before & during the paroxysm; which is also frequently mitigated by ye. timely use of ye. pediluvium or warm fomentations. When the disease is very severe, or comes on wd. epileptic fits, or returns at particular & stated periods, with a particular cold sensation of ye. some of ye extremities wd. advances by degrees to ye. head & thus foretels an approaching paroxysm, throwing a ligature somewhat tight round some part of ye. body or limbs wd. the blood hath not yet reached, will frequently prevent ye paroxysm from taking place, ~~or~~ or sometimes mitigate ye. violence of it — But our chief dependance for a radical cure of ye. disease ~~& Vinden~~ must be placed on a proper course of astringent or corroborant medicines, wd. a judicious & regulation ~~& observation~~ of diet by which the predisposition in the system may be corrected or at least counteracted — I have often made ~~of~~ an observation which is confirmed by daily experience, ye. sensibility & irritability of any particular part, as of ye. alimentary canal, or ye. mobility of the whole system is commonly either owing to or accompanied with debility & relaxation — This is particularly evident from what we observe to happen wd. and ~~afflicted~~ wd. disorders of the Viscera, in young people, in ye. females & in those whose strength is broken by long diseases or violent evacuations. In ~~the~~ persons advance in age, ye. mobility of the body decreases; & in those ~~inhabit~~ also & ye. inhabitants of ye. colder regions, where there is a greater firmness of texture & strength of solids, this morbid mobility is very uncommon — It is particularly in ~~the~~ cases when the Mobility is accompanied wd. debility that astringents are most indicated; tho they are also useful in ~~cases~~ an irritable habit of body, where there are no evident signs of relaxation or weakness.

The antispasmodic effects of Æther are now generally known & it is frequently employed in that intention: on account of its extreme volatility its effects are sudden & transitory. It is sometimes given in ye. spasmodic affections of the stomach, & is then given in ye. quantity of 50 or 60 drops in a little water, when its effects are instantaneous if it produces any at all — The external application of Æther to ye. forehead for ye. nervous headach was long kept secret by ye. late Mr. Ward: in these cases it will frequently produce sudden & powerful relief. — It ought to be applied on a little cotton & covered with bladder to confine it to ye. part —

The oleum Succini, the British oil & ye. Harlem oil are often used externally & internally in various spasmodic affections & frequently afford great relief. The British oil & ye. Harlem oil appear to be of ye. same nature & to be ye. empyreumatic oils of particular substances: it is perhaps not very material what substance is used for the purpose. They are both very considerable stimulants as well as antispasmodics. The Harlem oil is very generally employed in flatulent Colics & spasmodic affections of ye. stomach & bowels; I have on several occasions observed it to give powerful relief; but it ought not to be used when there are symptoms of fever particularly if attended w. signs of inflamation — They are also used in ye. toothach, earach & other external topical pains & affections, and by your attending to their stimulant as well as antispasmodic virtue you will always know when to countenance their application

Remedies of this kind produce their principal effects on y. stomach or part to which they are immediately applied, which we endeavoured to prove when these remedies were the particular object of our consideration. But however this may be, it is nevertheless certain that the restore & confirm y. tone & strength of y. whole system, diminish the mobility, excite appetite, promote digestion, & redden y. ~~movable fibres firm~~ motion of y. solids & firm & equal by wh. all y. functions are performed properly, & many evils thereby prevented. They are to be used only during the intervals of the paroxysms; and in order to obtain y. wished for effects, it is necessary to persist in their use a considerable time. It is however necessary to observe that we should administer them w. the utmost caution & prudence in sanguineous temperts, in plethoric persons, & where there are any signs of visceral obstructions. The peruvian bark & prepared steel dust are the most effectual medts of this class, if no particular peculiarity in y. constitution of y. patient, contraindicates their use. It is proper to combine them, or at least to give them alternately, but not in the same day. It is ~~not to~~ better to give them in small, but repeated doses. Many advise the ~~use~~ giving purgative medts at proper intervals; but this is a bad practice, unless ~~th~~ particular symptoms, require it; for we may by one purgative destroy all the good effects ~~of a whole~~ gained in the space of a week. Chalybeate waters are likewise of the utmost service, particularly when the steel in substance y. peruvian bark cannot be employed w. safety & convenience. Bitters, aromatics & acers another remedies are likewise advantageous, when administered w. prudence: Red port & claret are proper vehicles in which to administer the medicines. Cold bathing continued for a long time is one of the easiest & most efficacious remedys to cure the disease. The morning is the proper time to go into the cold water. The choice, quantity, composition & form of the remedies just mentioned are to be regulated by y. strength, habit & other circumstances of y. patient. As the constitutions & particular idiosyncrasies,

of Women differ very much, we should always give a new medicine w. great circumspection, & ~~always~~ make frequent trials of y. remedy before we persist in the use of it for any length of time. For it very often happens that one medicine will succeed w. a particular patient, & fail in another, and what may have been highly useful to one, will prove hurtful to another. There are some particular medicines which have been reckoned specific for y. cure of this disease; but they are either such as we have already referred under ~~same~~ head of our ~~Indications~~ curative Indications, or else such as whose virtues are by no means founded on experiment. Some again have been used in particular cases, which we could not refer under any particular division. Some remedies of a rough nature & violent operation, as emetics & cathartics, have been said to have been useful in Women of a strong & robust habit of body, especially if they were administred for a long time. But their effects must always be doubtful. By Fumes & setons we may sometimes relieve the patient from y. more violent attacks of the disease; especially if she is of a thin & spare habit of body. Sometimes very violent affections of the mind, as great terror, have prevented an approaching paroxysm, & even cured the disease altogether. — Of this I saw an Instance in y. Hospital of Edinburgh. A young girl had been for some time cruelly afflicted w. an hysterical epilepsy: various remedies were tried to no purpose, untill y. Physician ~~called~~ in her hearing ordered small iron hooks & pincers to be made red hot, and her flesh to be lacerated & burnt w. them, to recover her out of the fit. The terror of y. remedy had such an effect on her mind, that she had not a fit afterwards: Boerhaave hath an Instance of y. same kind, y. happened in the Foundling Hospital of ~~Paris~~ Orphan Girls at Haarlem, where one of the children was subject to have epileptic fits, by which the other girls were so alarmed & agitated that two of them were seized in the same manner: Various

* On the influence of the Passions Dr. Falconer of Bath has published an ingenious performance & indeed a collection of facts that are deserving of your attention; but the great desideratum of applying them to relieve diseases is wanting. There is indeed a great difficulty in making ye application, for we know ye same impression & ye same degree of impression will not always produce the same effect in different persons, or even on the same person at different times. In a voyage at Sea the vessel was in ye most eminent danger of going to the bottom, and this afforded me an opportunity of attending to the effects ye terror & ye fear of death produced on the different Seamen. For the some were excited to make unusual & superior efforts, others were deprived of all energy & even the power of motion they were totally stupefied with fear. — The same observation has been made repeatedly by Physicians, Poets & all observers of Nature. It is therefore as common to meet with the expression Fear added wings to his

methods were attempted to avoid prevent ye return of these paroxysms; but to no purpose; untill by ~~exciting~~ making a stronger ~~and~~ impression on ye mind the terror of burning them w. red hot iron, the first agitation was overcome & not one of them experienced another attack of ye disease. — What Impressions may be made on ye Mind of a bystander by various agitations of even an indifferent person, hath been taken notice of by physicians in every age, from what they have observed to happen particularly in nervous diseases; but we have also the testimony of ye best Historians upon this subject, & the how Armies have been affected by ye terror & or courage of a single Man: not to mention what daily happens in enthusiastic meetings from enthusiastic preachers, where a great part of ye audience is frequently affected in ye same manner as the preacher, and of same motions, ~~convulsions~~ contortions &c. This is a subject that might give room for various disquisitions & enquiries, ~~could we time permit it~~ although I shall only mention it to shew what an influence the mind hath on ye body, & that it may not only produce, but even remove nervous disorders. It will however always require a very accurate judgement to ascertain ye proper cases & time when the passions may be employed to relieve a disease, ~~which no rules can be laid down, but what necessarily follow from what has been premised~~ already, & ~~which is too obvious to require a further elucidation~~ I conclude: notwithstanding all our endeavours it frequently happens that remedies will be little or no effect in correcting ye predisposition, & tho they may in some measure counteract ~~relieve~~ the frequency & severity of ye attacks, they often disappoint us in ye expectation of a perfect cure. Sometimes indeed they even aggravate ye disease, and make it necessary to abstain altogether from ye internal use; but recur to a proper regimen, exercise & ye cold bath. Change of climate & manner of living hath sometimes made a perfect cure, ~~after~~ when the disease hath continued long & become periodical. The age of puberty, or any other considerable change in the system hath relieved some, Matrimony & Childbearing hath been the Means of recovering many!

fit, as it is ye. fear deprived him of all strength; & since it has also happened that the passion of fear may on some occasions have been attended with salutary effects, on other it has undoubtedly been productive of most unfavourable consequences. The same observation will also apply to the other passions ye. might occasionally be thought of to relieve nervous diseases. Anger for instance has been said to have been the means of rousing a patient out of an hysteric paroxysm; but how much oftener is it the means of bringing on a fit.

We are next to enter on the consideration of the remedies which have the fluids for the Object; having finished ye those which act either on the simple or moving fibre. In my former courses of lectures I entered into a full investigation of ye different fluids, & particularly the blood; this is now however in a great measure unnecessary; as this subject is treated very fully in Dr. Cullens Materia Medica, to which I refer you as it differs ~~but~~ in very few respects from my own sentiments: We must however premise a few things, ye. I may be better understood in the sequel & to avoid repetition. — I imagine that you are not now to learn that ye. blood is composed of 3 parts viz: Coagulable Lymph, red Globules & Serum; the other matter may be occasionally present; but are not to be considered as constituent parts of this fluid. — Physicians from observing the diff. appearances of blood in diseases; the changes it spontaneously undergoes out of ye. body, & the effects that various substances have on it, without hesitation concluded, that these phenomena ~~frequently~~ might also take place in the body, & thus be productive of various diseases: adds to this that by Chemistry ye. blood may be decomposed & reduced into various parts, which never were ~~may~~ ~~actually~~ formally present in it before it underwent a decomposition, it was thus argued that either by ye. excessive or diminished action of any of these parts, various diseases of the fluids might be occasioned, & therefore indications of cure were instituted accordingly. This also led Physicians to institute experiments on ye. blood out of ye. body in order to ascertain the real effects of meds. on this fluid: but they never considered that all vegetable substances are liable to a fermentation in the stomach, before they enter the circulation. & that all metallic or mineral matters are subj

ject to be decomposed by ye. acid which is always present in that organ: by
which both Vegetables & Animals must necessarily be greatly altered &
changed, from what they were originally. This led others into ye. opposite extreme; & whilst the former were for deducing the causes of all dis-
eases from a vitiated state of the fluids; the latter, in speculation
at least, were for paying no regard at all to them, & considered the blood
no more than if it were so much Water circulating in our Veins.
But this will never hold in practice as the contrary takes place
every day: There are certain diseases in which the blood is not only
vitiated, but is even primarily affected; and where our Indication of Cure
consists entirely in restoring ye. blood to its natural state & quality: Of this
I gave you an undoubted example in the Scurvy: a disease which is brought
on gradually, evidently owing to ye. blood being contaminated & only to be cured
effectually, by such a course as will correct the fluids & restore them
to their natural qualities. That Medicines as well as diet affect the blood, is
evident from what is daily observed in Nurses: where the Children and very
commonly affected by ye. what the Nurse takes either as Medicine or food. Nay
it is not uncommon to cure the Venereal disease in Infants, by giving putting ye.
hand on account of Mercury: Dr. Young observed that ye. Milk of a Bitch was
totally changed from its natural quality, after ye. animal had been confined to
milk or Vegetables for some days; it became as acrid as the Milk of ani-
mals who live altogether on grass & herbage. We often also find that ye. Urine of
a person is changed in quality, taste, odour & colour, upon taking particular
substances, whilst there is not the least alteration in any of ye. animal
functions, neither is ye. action of the heart & arteries increased or diminished.
If a person were to live altogether on animal food, he would in a short time
be attacked with some acute putrid disease, that would not be easily cured.

these facts are too evident & positive to leave us any room to doubt, but what the fluids of our body may be primarily affected & undergo considerable changes. It does not however follow that the causes of diseases are so often lodged in ye. blood, as many Physicians imagine; but of this we shall treat under each Class of Med.s ye. have been supposed to answer particular Indications. 1. Alterantes; by which are meant such remedies as correct ye. Viscidity & Acrimony of the fluids: It is very great doubt with me, whether this Indication ever occurs; for ye. present however we must allow it, as it will afford us an opportunity to treat of ye. particular substances that are supposed to have this effect —— Water. We have already treated very fully of ye. effects of cold Water in external applications: we shd now speak of its internal use —. Taken into ye. stomach it acts as a stimulus; removes oppressions there, assists digestion & promotes ye. evacuation of ye. faces. By its effects on the stomach it also causes a determination of the humours to ye. superficies of ye. body, & very frequently throws ye. person into a sweat. Hence it is often useful in Vomitings that are owing to spasm or a constriction of ye. cutaneous pores: This kind of Vomiting particularly occurs during ye. cold fit of Intermittents, & is probably excited by Nature to retore ye. determination of the fluids to ye. skin, which by ye. spasm are forced to ye. internal parts of ye. body. For this purpose we generally order ye. saline draught: but cold Water will frequently prove equally effectual. The Ancients, and at this day ye. Physicians of Spain, Italy & other warm Countys, prescribe cold Water universally in continued fevers, and for this purpose cool it with Ice. This is notwithstanding so safe a practice in northern Climates where most fevers are attended with inflammatory symptoms, in which cold Water must necessarily prove hurtful. But in low nervous, putrid & malignant fevers it is both useful & agreeable: It refreshes ye. patient, acts as a gentle Stimulant & diaphoretic, by which means it often proves of singular service; but whenever there are topical inflamations, & particularly of the Lungs, Stomach, Liver & Intestines, it is always attended with disadvantage & great danger.

Warm Water is attended with contrary effects when taken into ye Stomach; it acts there as a diluent & solvent, by which it expedes the solution of ye Contents of ye Stomach; relaxes that organ & ye whole system; also proves diaphoretic, but in consequence of having brought on a previous relaxation. When Water is carried into ye Intestines it acts there as a diluent & solvent; cold & warm Water do not differ in their effects in the Intestines, for by ye time they arrive there, they have acquired the temperature of the body, & therefore have now a simple action; which I said was that of a diluent & solvent: hence it dilutes the viscid matter ye and continually generated & lodged in ye bowels, prevents obstructions in the mesenteric glands & the other parts & organs of chylification, & by its bulk encreases ye peristaltic motion & promotes ye excretion by Stool & Urine. Water alone therefore, but particularly mineral & medicated Springs hath a considerable effect in curing scrophalous diseases: for it dilutes & attenuates ye viscid Stagnating humours & at ye same time encreases the action of the Vessels by its gentle Stimulus; by which means it answers every Indication required in ye cure of this disease. It is however necessary to take it in large quantities, when we expect any considerable effects from it; and it frequently happens ye the lower & middling kind of people, who think nothing of swallowing pints & quarts of a Draught receive advantages in these cases, which nicer & more delicate people seldom experience. Hoffman & many other physicians have wrote long treatises on ye good qualities of common Water, & have even given it the name of a universal panacea, which it seems to deserve better than any of the other substances ye have from time to time been dignified with that title. I have repeatedly ordered a Tumbler of cold Water early in the Morning to persons subject to indigestions, flatulencies & ye hypochondriac disease of Hysteric, & those that were subject to cramps & Spasms in the Stomach, ~~& I have done~~ when it hath been more serviceable than any Stomachic remedies applied in this intention. It is disagreable at first, but in a

Pure water taken in large quantities produces considerable effects on the System & will frequently cure the most obstinate disorders. — The hot wells of bristol in England are a proof of the efficacy of water. — The bristol water is one of the purest & simplest water hitherto discovered, & has been recommended in a variety of disorders. The warm Springs near y. Potowmack in Virginia appear to be of the same nature with the bristol water; from a superficial examination of a bottle that was brought here I am of opinion that it is a very pure water, containing a considerable quantity of air & therefore an excellent solvent & extremely light & agreeable to the stomach. Upon this principle I have recommended it to several gentlemen in this City who were afflicted with the most obstinate complaints in the stomach & bowels arising from indigestion & whose Medicine appeared to have little effect on the complaint. They found themselves greatly benefited by drinking those waters, & all agreed that they were not only pleasant to the taste but perspired remarkably quick by perspiration & Urine & on the first drinking of them they likewise proved Cathartic. They drank from 4 to 6 & 8 quarts in a day. — It is much to be wished that some Analysis were made at the Spring in order to determine with certainty the quality of the water, that it might be more generally known & recommended

that time they become so accustomed to it that they can no longer be without it. — Water hath likewise a considerable effect when carried into ye. blood & mixed with ye circulation: for by increasing ye bulk of ye fluids it stimulates ye heart & arterious system; hence it encreases every secretion; prevents accumulations & plethora, & must therefore undoubtedly contribute greatly towards preserving health. — From the account now given of Water, it may be considered as an attenuant; for as a greater quantity of fluid is introduced into the system, it must necessarily dilute & attenuate the humours of ye body: but Water is also perhaps the only attenuant: for the other substances may in ye end very considerably ~~effect~~ attenuate the blood & other humours of our body; yet this is in general owing to ye pernicious action on the Solids. We now shall go on to consider those remedies that have been generally accounted attenuants by physicians, & continue still to be prescribed in ye Intention —

1. Of the diff. kinds of Alkalis. From ye effect wch. Physicians observed Alkalies produced on animal substances when applied externally, and their known quality of dissolving & attenuating ye blood when mixed wth. it out of the body, they naturally concluded they would be attended wth. the same consequences when given internally, and therefore they have always been reckoned very powerful attenuants, & continue to be prescribed in that intention very frequently. — The several circumstances hereafter concur to render their effects on ye blood as attenuants very doubtful, if not improbable. — In the first place they must necessarily meet wth. an acid in the stomach, which decomposes & neutralizes them, by which they are entirely changed in nature & quality. Secondly they must be applied in a quite concentrated state if they are to act as solvents or attenuants; ~~but~~ this can scarcely be ye. case when they are taken by the mouth, for the quantity of fluid they meet wth. in the stomach & intestines will greatly dilute them, & the air will

under them mild. These considerations cannot but make it extremely doubtful, whether their attenuant virtues are so considerable as Physicians have generally supposed. — A long continued use of them will no doubt have a considerable effect both on solids & fluids.

Quick lime. This hath also been reckoned an attenuant, upon the same principles w.th the alkalis of which we had just now treated; we shall however find that it is very frequently used w.th great success in cases where attenuants would be y.e most improper remedies. It is now very universally employed in calculous complaints of the kidneys & bladder, & hath been supposed to prove the Dissolvent of dissolving calculous concretions: to me however it appears more probable that it acts as a gentle astringent and absorbent; by which it destroys y.e too great quantity of acid in the stomach, corrects the weakness & disposition of the kidneys y.t favours y.e concretion of calculi; & thus prevents y.e uneasy symptoms & y.e paroxysms of the stone: In allaying its ~~acr~~ spasms is similar to the Aloa Ulmi & other astringents of which we treated formerly. It is also employed w.th advantage in many other diseases: In a relaxed habit & weakened digestion Lime Water hath often been attended w.th very happy effects: It also frequently cures y.e fluor albus, w.th is commonly accompanied w.th a relaxed habit of body & weakened digestive organs. In chronic dysenteries Lime Water hath also been ~~frequently~~ often advantageously employed: when the disease is accompanied w.th much griping one half Milk may be added; and we ought from time to time give gentle doses of Rhubarb & Calomel, by which the glands in the intestines are stimulated to a more copious secretion of mucus y.t tends to eliminate & wash out the offending cause; and as chronic dysenteries very frequently owe their cause to an Ulcer in some part of the Intestines, this method will be altogether necessary. Dr. Morton hath also found it useful in the internal Ulcers, even of the lungs, when mixed & drank with Milk: It hath also been recom-

mended in scrophulous swellings & Ulcers: All the physicians however who recommend its use in these & other disorders caution us against using it freely, where it renders the body costive & reduces or emaciates y. system ~~to a state of leanness~~. In these cases it is particularly necessary to combine it with an equal, or even more, quantity of Milk, & begin with small portions say from 4 to 8 ounces a day & increase it gradually untill the patient takes from one to two pints in the 24 hours. It hath also been found serviceable in habitual or chronic low intermitting fevers. Dr Pepys recommends Lime Water to be applied externally in Ulcers, eruptions of the Skin, in fistulas & many other similar cases. In the London medical essays we have a very curious case of a gentleman who had caught in, the or what is more commonly, but improperly called, scorbutic Ulcers in the both Legs: for which he had consulted y. most eminent physicians in Britain & had tried Mercury, Antimony, Peil digitalis, Mineral Waters & indeed every remedy y. could possibly be suggested to him, to no manner of purpose, for many years: but was cured in a very advanced age, entirely cured by drinking Lime Water & fomenting the parts w. it at y. same time. Lime Water mixed w. oil of Almonds or Olives is much recommended in scalds & burns: A liniment made of Castile Soap & a lixivium of quick Lime is reckoned an excellent application to scrophulous swellings, either to discuss or maturate them: Lime Water ~~mixed~~ in which sublimate is dissolved gives us the Aqua phagedenica, which is esteemed a good gargle in several Ulcers of the Mouth & fauces: Lime Water impregnated w. Copper or roman Vitriol gives us the aqua Lapidina which is a good application in weak & sordid sores, particularly in old people, where the disorder is generally owing to debility: Impregnated w. the Saccharum Saturni it is sometimes useful in erysipelatous inflamations & itching eruptions. Dr Fuller recommends a liniment made of Quick lime & Honey in scorbutic & arthritic pains. The exhalations of Lime in new built houses are apt to occasion angina, rheumatisms, palsies, apoplexies & even death

Saponaceous (Soaps). By which we mean a combination of Alkali & expressed oils, or animal fat; tho many other substances have been very improperly called saponaceous. Soap is very commonly employed in Medicine; tho it is difficult to explain or conceal its real Virtues. From its known very effects for ~~[illegible]~~ domestic purposes, it hath been supposed to ~~[illegible]~~ operate in a similar manner within the body, and hath therefore been considered as an attenuant, resolvent & detergent; and is almost universally prescribed in infantile obstructions, ~~[illegible]~~ of the Viscera calculous concretions in the Kidneys, Acidity & inspissations of the bile &c. — As effects are however various in different persons, it will frequently act as a purgative in small quantities; but at other times even large doses are not attended w. any sensible effects. This makes it extremely probable, that Soap is liable to be decomposed by the acid in the stomach, and will therefore at different times give different Debita produced ~~[illegible]~~ various effects. We shall next consider the diseases in which it is used. Soap dissolved in Water is reckoned more powerful than simple Water, which proportion hath been swallowed, on account of the detergent & solving quality of the Soap. It is also recommended in that state or disease of the Stomach which Boerhaave & his followers have called the glutinous and spongy Aneurism, where there is a great secretion of Mucus in the Stomach & Intestines, & indicates a debility & relaxation of ye. chylopoetic Viscera. In this disease it may answer well, especially when combined w. Bitters, to restore the proper tone & strength to those Viscera: It is also recommended in infantile obstructions of the abdominal Viscera, and is then commonly combined w. Bitters & preparations of Mercury, to which indeed the Virtues of the Medicine are principally to be attributed; and the Soap, in ye. quantity that it is generally employed, can contribute but little to the cure. Whenever acidity prevails in the primæ Viæ, it is also properly prescribed & particularly in Infants & Children troubled w. acidity & flatulencies, by wh. the Stomach is distended & hard as a drum, fills of soap will frequently

afford considerable relief. For this purpose it may also be dissolved in y. Yolk of Eggs & mixed w. Water, to be rendered palatable by y. addition of some proper Syrup. It hath also obtained great fame in calculous complaints, for which it is necessary to take it from half an ounce to a whole or more Ounces in a day. Huxham however tells us that y. long continued use of this remedy in calculous cases at length produces or at least disposes to the consumption, Scurvy, Hemorrhages & mortal obstinate dysenteries. And by the experts of Bertty & Morand it appears that the Urine & Serum of ly. Blood in persons who long used Soap have become much more alcalescent than in healthy persons. Dr Ellemyng recommends it as a sure remedy if taken from one to two drachms a day to take off corpulency & obesity. —— Soap is also used w. advantage externally in fomentations to in arthritic & rheumatic pains & affections: Dissolved in Milk it is ~~also employed with advantage~~ one of the most effectual applications in swellings & indurations of the Breast from coagulated & stagnating milk: It is also one of the safest & best remedies dissolved in a proper menstruum for injecting into fistulous sores & ulcers of the breast from the same cause. A plaster or spirituous solution of Soap is likewise frequently useful in chronic rheumatic pains and other deep seated swellings of the joints. —

Inspissantia are opposed to attenuantia, and comprehend such remedies as will restore a proper degree of consistence to y. fluids when they are in too thin & dissolved a state. — Whether any remedies have these peculiar properties is a very great doubt with me: for even y. most glutinous substances ~~are~~ undergo a fermentation in the stomach, by which they are totally changed from y. original nature: In Dr Cullen's Treatise on the Materia Medica you will find this Subject treated more fully than our time will now permit us to do —

Under this Class of Inspissantia, Authors universally use Demulcents, by which term are meant such medicines as will defend the parts from the irritation of their acrid fluids, as in a Catarrh, Dysentery &c. of which we shall treat particularly under each substance generally used in this Intention.

1. Gum arabick. This is one of the purest & most simple mucilages and is indicated whenever the natural mucus is abraded: in which case it supplies the defect of that: It is useful therefore in thin acrid & fluid defluxions on the breast & fauces: in ye. Cardialgia, Hiccup, Diarrhoea, Dysentery and an ardor Urine. In these cases the oil of Almonds or Olives may be advantageously combined with it, especially since Mr. French, an apothecary in London, hath discovered that by means of ye. Mucilage of Gum arabick Oils may be combined w. Water by trituration or agitation only, and ye. addition of some syrup — The Gum Tragacanth agrees in every respect w. the former, & may be employed in the same intention. It is often very proper to let persons attacked w. a hæmorrhage drink plentifully of these mucilaginous substances dissolved in Water: for as hæmorrhages are often sometimes being but often attended with irritation, some of this kind are extremely proper to lessen this. Dr. Hasselquist in his Travels to the East gives us a curious account of upwards of hundred persons besieged by the Enemy in a fortress which was unprovided w. ye. necessaries of life; who sustain supported life by licking some of the Gum Acacia melt in their mouths & swallowing it: by which they took off the irritation & sensation of hunger & lived upon asthimpala for almost two Months. — The Ichthyocolla or Isinglass agrees much with the Gums in Virtues & qualities: as an animal glutinous substance, on which account it is more nutritious & tenacious than the former, & therefore in particular cases preferable to them; but less proper in the dysentery & those disorders that are accompanied w. a tendency to putrefaction. The Mallows, linseed, liquorice & the other sweet mucilaginous substances are so much in Virtues that they not require a particular rule to be given

The second class of remedies are the Antacida. Physicians on observing the acidity constantly prevail in the stomach, & y. disposition of our Vegetable aliment at last to acrimony, then concluded that this acid might also be carried into & mixed with the blood & there occasion various disorders which they attributed to be owing to an acid acrimony, and therefore administered remedies with the intention of correcting that disposition in the fluids. They were further confirmed in their opinion on observing that an acid fluid might be obtained from y. blood by distillation. Experience will not however warrant this opinion to be well founded, and hitherto there are no facts which make it probable that acidity prevails beyond the Stomach & Intestines. For when the aliment is carried into the Intestines it there meets with the bile, which by its bitterness counteracts the acidity and when it comes to be mixed with the blood, this w. hath a natural tendency to putrefaction, any acidity that the chyle may still retain is soon overcome. This is confirmed by what we observe in persons who dy. of want for "they should have been subsisted in a manner altogether on Vegetable aliment, yet when ever the cond. to want nourishment they will be affected w. a flux of the putrid kind & die w. evident symptoms of putrescency: this would or could not happen if there were any acidity present in the blood. Acidity therefore appears only to take place in the stomach: it is even seldom if ever discovered to be lodged in the Intestines; but in the stomach it is always present & very frequently arrives at a morbid degree. This happens chiefly when the stomach is relaxed & y. digestion weak: or where we take hard & insoluble Vegetable substances: or if from a morbid state of the stomach, as sickness or other complaints, the food is detained long in that organ: in this case an acid is often produced as corrosive and strong as any of the mineral acids, which erodes even the mouth of the stomach as it comes up out of the stomach. The Medicines which correct this disposition have been called Antacida & are 1. Absorbents.

We employ ~~have~~ depth kinds of Absorbents in practice: the most common and Magnesia, Oyster shells, Crabs eyes, Corals &c. — They seem however differ in their effects & it is of little consequence to which we give a preference. Cheapness & convenience may altogether determine our choice. They all act by absorbing the acid with which they form an earthy salt that generally proves purgative: They have no other effect but to absorb the acid they meet with in the stomach; but have no tendency to prevent its future generation; which I said was generally ~~caused~~ owing to a weak & relaxed stomach & therefore only to be remedied by such remedies as will restore the tone & strength to this organ —

rhina or Sternutatories; by this term we mean such reme-
dies as stimulate ye. inner membrane that lines ye. Nostrils
& produce a discharge of mucus from those parts — They were
formerly in much greater use than they are at present; &
considerable effects were attributed to them in particular
diseases, of which we now with great reason ~~that~~ do not much
consider them — As local & partial stimuli they may some times
prove useful in partial & external affections of the head: the
substances at present most generally employed are Turbeth mine-
ral; Asarabacca & Tobacco. — They have been principally
recommended in rheumatic affections of the teeth, ears & head;
and in inflamations of ye. Eyes — To persons not accustomed
to take Snuff; Tobacco will answer the same purposes in all ye.
respects as any of the other substances usually employed; they
appear to prove useful by exciting a stimulus in a part
different from ye. one immediately affected; & by increasing
ye. discharge of mucus from ye. part, a greater quantity is deter-
mined thither, & thus obstructions in ye. neighbouring vessels may
be sometimes relieved. — Persons subject to the toothach have
therefore experienced a relief from this complaint, for a while at
least, on accustoming themselves to take snuff. the same effect
is also very generally attributed to Tobacco when chewed; &
apparently on ye. same principle derived from its acrid stimulating ~~Vitre~~ quality.

But by a long continued use of Tobacco the sensibility of the parts is greatly diminished, & ye effects of it considerably blunted. It hath indeed been accused of many other disadvantages; but to me it is probable that ye greater part may be justly attributed to this cause. We find persons accustomed to ye use of Snuff scarcely sensible to any impression, or other irritation from ye most poignant ye. and prepared for this purpose. Their sense of smelling must therefore be greatly impaired by time, tho' not so much as on a first & superficial view we might be led to conclude. This is indeed a curious phenomenon in our constitution: the quickness of our senses may be impaired & dulled to a particular impression & yet retain in a considerable degree its acuteness for any that vary from this. Of this Snuff takers are a strong instance.

Tobacco affords us also a striking instance of Custom; & that this will even prevail over natural appetites & constitution; few Men strongly accustomed to the use of this plant, can do without it: a person will sooner put up with the loss of a meal than his accustomed pipe. The power of custom is indeed strongly displayed, through all its varieties in the use of Tobacco. The taste of this plant is at first extremely unpleasant: our disgust lessens gradually, till it vanish altogether: at which period the taste is neither agreeable nor disagreeable: continuing ye use of this plant we begin to relish it; & our relish improves by use till it arrive at perfection: when it gradually decays again; & at a time when habit is become most powerful, ye relish is gone; & accordingly we often smoke & take snuff habitually, without so much being conscious of ye operation. Writers in Ethics from this draw a conclusion that by custom ye rich & poor are put on a level: The rich and poor love ye relish ~~& enjoy ye~~ for their possessions, ~~which are enjoyed~~ and are

thus reduced to a par with their Neighbours — Its effects in Medicine
if not more considerable, are at least more perceptible & obvious. It evidently
shews us that ye most active substances may by a long continued use become
so habitual as to lose all effects on ye system: It is related of Mithridates
King of Pontus, that Poyson to which he had recourse in his extremity
lost its usual office & took no effect on him; as he had accustomed
himself to take it from fear least he should be destroyed by it; &
we daily observe that Medicines long continued lose their effects. —
Tobacco hath been ~~supposed~~ accused of injuring ye Constitution by
increasing ye discharge of Saliva & thus depriving ye system of a
fluid immediately necessary to Mastication & digestion. To me
it is not evident that these consequences are to be apprehended from
it. — Chewing or smoking of Tobacco stimulates ye salivary glands
& thus encreases a determination of fluids to them; it in fact
encreases ye secretion as well as excretion in the mouth; & if this
secretion is ~~x~~immoderately encreased, some of the other secretions
will probably be diminished; but ye body will scarce suffer
from wanting a sufficient supply of fluids. — There can how,
ever be little said in favour of ye practice which on many account
is an indelicate one; besides that in particular habits Tobacco
is hurtful by its narcotic quality. I know Instances of persons
reduced into tremors & spasms by chewing or smoking tobacco too
freely; and being on ye account under a necessity of refraining from ye
use of it. And as all Narcotics are injurious to ye digestive organs &
nervous system, no doubt Tobacco is frequently attended w. Inconveniences
which escape our observation merely because the custom is general

Sarum is more active than Tobacco, & is therefore ye basis of most medicated Snuffs, whether officinal or ye preparations of quacks who recommend them for various complaints; but particularly Inflammation of ye Eye, hardness of hearing & ye Toothach. There are Instances of their use in these complaints, & ye Acarum may therefore be occasionally ordered for diseases of this Nature.

The Turbith mineral is the most acrid & stimulating of any of ye Substances of this Class; it should therefore be used sparingly & with caution. Violent inflammation & hemorrhage from ye Nose are ye consequence of using it too liberally. Sternutatories have formerly been much commended in Apoplexy, particularly that called Serous, to excite ye Nerves & bring on a Sneezing, by which it was expected Nature would be enabled to throw off ye load & remove ye pressure from ye brain. In ye serous Apoplexy there is an accumulation of Serum in ye fine Vessels ye occasions a pressure on ye brain; a sudden concussion therefore, such as is produced by violent & repeated sneezing, may rupture ye distended & overcharged Vessels & render ye disease incurable. The disorder is indeed often owing to an effusion of Serum, when ye patient is seldom relieved; some physicians have indeed imagined that by applying Stimulants to ye nose in a view of increasing ye discharge of mucus ye Serum might be evacuated; but this is altogether hypothetical & highly improbable. In whatever light we view ye matter, the practice appears to be attended with considerable danger & very small prospect of affording relief.

Expectorantia are Remedies by which it is intended to promote ye discharge of mucus from ye Lungs, and are therefore in general denominated pectorals. — Innumerable & very different substances have been employed & recommended for this purpose. They may be all ranked under two general heads. — Expectoration may be promoted in ye same manner as any of the other secretions; by stimulating ye organs of secretion & thus occasioning a greater secretion, or when this is diminished or suppressed in consequence of spasm & constriction, by taking off ye spasm by antispasmodics. — All pectorals are therefore either of a stimulating or antispasmodic nature. — With respect to ye former we observe ye their effects are exceedingly precarious; for as ye discharge from ye Lungs cannot scarce be said to be one of those Emunctories by which Nature endeavours to throw off the degenerating humours of our body; we cannot easily determine any medicine's action upon the breast, in preference to any other part. We shall first consider the stimulating Expectorants: Ground Ivy, Hyssop & pennyroyal have at all times been esteemed pectoral; they are of an acrid nature & must therefore act by stimulating ye mucous glands in the Lungs; but this effect is exceedingly precarious. Elecampane is more acrid than any of the former & therefore hath also obtained a greater reputation; it acts on the same principle. — Squills are still more acrid & stimulating; if given in proper doses they prove emetic, purgative, diuretic & are very generally esteemed pectorals. — The Syrup is general use are the Vinegar & oxymel of Squills; the latter is a very disagreeable

the scrophula in any other part of y. System, viz. by mercurials, mineral
waters & y. bicuta. There are instances of ~~qua~~ consumptive complaints
from a scrophulous habit being cured by each of these remedies: the
bicuta I have myself known useful: mineral waters & mercury we
observed, when treating of fevers, to be frequently attended w. success in
y. scrophula. — The sassafras bath been recommended by Dr. Fuller in
his Book de Medicina gymnastica for y. scrophula & its usefulness
in some measure confirmed by Dr. Fuller in his Materia medica. It hath
also been much commended in consumptive habits; & from y. testimony
of different Writers it ~~was~~ deserves to be employed in y. scrophulous obstructions of the lungs.
Tubercules in the lungs occur frequently: they are y. most general cause
& foundation of consumptions & ~~also~~ y. most difficult to be cured. —
Obstructions from Mucus we have in the Asthma humorale & all
those disorders of y. breast that are known by the different medical
Writers under y. term of Sputuita Frigida; if acid stimulating peuto-
rals are at all indicated, their use is certainly to be confined to
y. diseases arising from this cause. — Here indeed squills, Decampane
& y. ~~other saffr~~ natural & artificial balsams as they stimulate y. solids
are serviceable by exciting the action of the vessels & enabling them
to throw off the Mucus that obstructs & almost chokes up y. vessels.
These diseases are seldom attended with fever, & it may even then be
considered as symptomatic. It is in these disorders that expectorants
combined w. stimulants ~~proved~~ either by Nature or art are attended
w. y. best effects: Asafoetida & Gum: Ammoniac, Garlick & Onions are
therefore ~~of~~ y. proper remedies in y. Catarrhus senilis & Asthma
pituitosum: we ought to give them in large quantities & continue
them without interruption for a considerable time

A nauseous medicine; the Vinegar poured w. Sugar answers very good pur-
pose of the oxymel & is not near so disagreeable. — They are generally
given in every complaint of the breast; we shall therefore enquire
into ye propriety of their use & at ye same establish ye general advantages &
disadvantages of this class of Remedies. — Diseases of the breast
or rather Lungs may be ranked under 3 general heads: viz. Inflamation,
Obstruction & Spasm; in all of which expectoration proves ye natural
solution of the disease; it is the Physicians business to know in
what manner this is best promoted in each particular case; for
as you see the causes may be very different, the cure must also
undoubtedly vary. — Instances of inflamatory diseases of ye lungs we
have in the pleurisy, peripneumony & Consumption. The cure of
these depends in a manner altogether on ye antiphlogistic cure,
viz. bleeding, gentle laxatives, plentiful diluting drinks, Clisters &c.
Pectorals have seldom a place in our indications; tho they are too
often employed. — Expectoration in these diseases is a consequence
of ye Inflamation & it is not in our power to bring it on before
ye inflamatory symptoms are lessened; & ye best method of promo-
ting it is to keep ye fever moderate & let ye patient drink plenti-
fully of mild drinks; if any medicine is necessary to act as a gentle
Stimulus, I never found one to answer ye intentions better than
antimonial wine or any other weak antimonial. A Consumption requires
a similar treatment; small but frequent bleedings w. gentle emetics
given repeatedly, a Milk & Vegitable diet w. constant exercise are of
more service than all ye pectorals that ever were invented. The devil

of many have been saved by this method, & numbers I am convinced have been destroyed by pursuing an opposite course & having recourse to pectorals such as y. various natural & artificial balsams; y. different syrups & emulsions, ~~boundless~~ too numerous even to be enumerated; all of them either acrid & stimulating, or by y. oleaginous heaviness destroying y. tone of y. stomach & loading it with undigestible substances. — They may indeed occasionally palliate; but they never contribute in any degree whatever to y. cure of y. disease, & should therefore never be employed, by a physician at least, untill he is almost convinced of y. impossibility of medicines effecting a cure. — Consumption as well as y. other diseases are indeed frequently accompanied with a symptom, not only exceedingly troublesome to y. patient, but greatly aggravating y. disorder: this is a constant tickling in y. throat which occasions an almost incessant coughing & requires absolutely y. use of some remedies to allay it. Mucilaginous & sweet substances, held in y. mouth, by w. this effects are extended into y. trachea will frequently have this effect & palliate the symptom; tho they cannot be said to contribute much to y. cure. — I said another cause of Diseases in y. Lungs were obstructions; these are of different kinds: viz. Scrophulous, tuberculous & mucous. — Scrophulous habits are exposed & liable to consumptive complaints; nay scrophulous obstructions may have their seat in y. Lungs as well as in any other parts of y. system. This is easily to be known by y. general habit of y. patient & sometimes from hereditary disposition. — When we can distinguish y. cause we are to treat y. disease in y. same manner as we would treat

The 3d Cause from which disorders in ye Lungs originate, I told you was Spasm — In this Spasmodic remedies only can be attended to w. advantage; & opium is ye one on which we chiefly depend. — By ye solution of ye Spasm expectoration takes place; under ye Article of Opium & it was said that this medicine by checking expectoration, sometimes laid ye foundation of obstinate obstructions in ye Lungs; & therefore advised you in asthmatic complaints, when Opium becomes necessary either to palliate or relieve ye disease, to combine Vinegar of Squills w. it, to obviate ~~any~~ this bad tendency in Opium. — When we want to promote expectoration by means of ye Squills & at ye same time take off irritation in ye trachea or other particular part, we may prepare a Mixture, by no means disagreeable, of an ounce of ye Vinegar of Squills, about ℥iv of simple Cinnamon or Peppermint Water, 60 Drops of Laudanum & add a sufficient quantity of Sugar to render ye Medicine palatable. Of this Mixture ye patient may take a table spoonful every 2 hours. If ye Squills are so disagreeable & nauseate ye Stomach too much or irritate ye Bowels, we can substitute ye antimonial Wine in ye place. A Mixture of this kind is also sometimes of singular use in ye latter stage of Pleurisy & peripneumony, when ye inflammatory symptoms are taken off & yet ye cough & irritation, & yet promote expectoration. Likewise in ye last stage of Consumption, when ye relieving particular symptoms, is ye only ~~also~~ comfort ye Physician hath left: He may thus ease, without shortening ye days of ye patient. — By ~~attending to~~ observing what hath now been delivered on ye causes to which diseases in ye breast are owing, for which expectorants have been generally commended; & ~~attending also~~ attending to ye principles on w. their operation depends, you may form a just idea of ye use & how when ~~any~~ their administration may be useful & proper.

The next class of Evacuants are the Sialogoga, which comprehends such substances as increase the discharge of saliva from the salivary glands in the Mouth. All acid substances whatever upon being held in the Mouth, will stimulate the glands to a more copious secretion; but no Medicine except Mercury will have this effect when taken internally & mixed w. the general mass of fluids. — Quicksilver hath had more attention paid to it than all the other metallic substances put together. It hath been supposed to act chiefly if not solely on the fluids; more accurate observations however demonstrate its principal effects to be owing to its stimulating quality. The Evacuations it produces are so singular & copious that many physicians have been led into the opinion that it prepares the fluids for to pass off by a particular secretion: But y. peculiarity of the Evacuation may be explained on the footing of its stimulating power, nor do any well confirmed observations shew, y. during y. most copious use of mercurials internally, y. fluids are at all altered from their natural state, at least not more than what might be supposed to happen from any other inflamatory stimulus. Instead of y. blood losing its consistency by y. use of Mercury, it seems rather to acquire more viscidity & shews marks of y. inflamatory diathesis. It is indeed a more powerful stimulus than most other metallic substances & acts as such on the stomach, Intestines, urinary passages, the organs of perspiration, the secretories of Ulcers whether spontaneous or artificial, & very probably in many other parts of the System, where we have not an opportunity of discovering it. But the principal object of its stimulus are the salivary glands. This is perhaps peculiar to it: hitherto at least we have not discovered any internal medicine y. hath a peculiar tendency to pass off by or stimulate these organs. Be this is peculiar to it, so it appears to be its principal operation: & it hath been the great aim of Physicians

to obtain its operation in some other way; but hitherto we have not been able fully to accomplish it.— Mercury acts on the stomach, when the preparation is very acid, owing to its being then more soluble; tho it ~~and~~ requires to be given in large dose when it is to have this effect. It acts on the intestines from a contrary quality, when its septicons are mild & therefore less liable to irritate the stomach, as being less soluble; but here too must be given in large doses. Either the acid or mild septicons of it when given in small doses are carried into the common mass of blood, without affecting either the stomach or bowels. Then, if it is a very acid septicon, and it is readily soluble & diffusible, it proves a general stimulus to the system, & so passes off by y. most general organ of secretion viz. y. of perspiration or sweat. But if it is a mild one, or the acid one is given in small doses at proper intervals, so as not to stimulate this organ, but to be accumulated in the blood, it never fails to stimulate the salivary glands. This does not depend on any mechanical quality, & therefore not on its specific gravity but rather on a chemical property & from a disposition to unite & assimilate w. one portion of our fluids sooner than another. There is however no foundation for supposing y. it prepares y. fluids in a particular manner to pass off by y. salivary glands. If a fluidity of blood was merely induced by it what reason can be assigned for its passing off by y. salivary glands sooner than by y. other excretories. It seems therefore to depend on some peculiar chemical relation & not on any general change produced in the fluids. We may perhaps add that ☿ does not seem to stimulate y. salivary glands by a specific power, but the same by which it stimulates any other parts, viz. it acts on them only by being accumulated & stimulating them in y. same manner as any other stimulus might do, y. could arrive at them. For a proof of this we find y. ☿ applied externally to the salivary glands produces the same effects & even more suddenly than when given internally. We have still

a stronger proof in ye effects of mercurial Vomitings: We can scarcely obtain this effect w.out giving a large dose of some acid preparation, for instance giving of Turbeth: mineral. Their operation by Vomiting and Purging infallibly induces a salivation & ye immediately. This is probably occasioned by the stimulus being applied as it passes over ye Tongue, in ye same manner as Emetic in acting by Vomiting inflames the Oesophagus, Mouth & fauces. One thing still remains to be considered, viz. it, that the saliva secreted in this case ~~[illegible]~~ hath a peculiar factor. This seems to depend on ye increase of ye Secretion. For there is no instance of any secretion being increased, w.out some change being produced in the secreted fluids, which appears to happen in the ventricy of glands and in the Mass of fluids. It hath also been observed that when salivation came on spontaneously & when taken, the saliva had the same factor & appearance, as if it had been taken. Quick silver condensed into Vapour & applied in ye state to ye nervous system brings on Torpor, Tremors & ye palsy; whether it is any cause of state free from equality of this kind, is by no means certain; but we find ye this effect of producing Paralytic complaints is much confined to its state of Vapour. It occurs chiefly in Miners & such Tradesmen as are necessarily much engaged in ye Fumes of Mercury. When it is introduced into ye body, & particularly in its saline state, it only exerts its stimulating quality, and we seldom if ever perceive any narcotic effects from it. You will find a more particular account of the operation of Mercury in Fullen's Materia Medica: I now go on to consider its use in Disease; of these the Lues Venerea deserves to be first named, as Mercury is ~~for~~ a sovereign remedy for this disorder. The Lues Venerea is properly divided into 2 species viz: Gonorrhoea & ye confirmed Lues: they require somewhat different treatment: We shall first speak of the use of Mercury in a Clap. This appears evidently a local disorder, almost totally confined to the Glans penis & only in very extraordinary cases extending to the prostate Glands & Neck of the Bladder. It appears

to be atonical inflammation, without Ulceration, which sufficiently explains every Symptom y. occurs in this stage of the disease. From this View of the Disease it is evident that y. internal use of Mercury can contribute little or nothing to the cure: We may indeed add Calomel to our purgative Electuaries to keep the Body open & encrease the Secretions by Stool, to which will have a tendency to diminish Inflammation in every part of the System; but it cannot be said to have any immediate effects in curing y. disease. The Cure of this disease is now very simple & easy to what it was even a few years ago, when the Nature of it was but little understood by most practitioners: I shall give you what I find most successful after having previously mentioned a much more expeditious method than what is generally followed. — Mr. Fordyce on making experiments w. y. caustic alkali on the Mucous of our body discovered that it had the property of dissolving it more quickly than any other substance: & from that he conjectured that a weak solution of it in Water would stand a very rational chance of being serviceable in the Gonorrhoea: He soon had another opportunity of trying the effects of the Medicine: He injected a weak solution upon the first appearance of y. disorder into the Urethra; by which he cured it radically, before it arrived at any greater degree. This was afterwards confirmed by many Gentlemen of Edinburgh, whose Seniority even led them voluntarily to receive the injection, if they might have an opportunity of trying the Experiment in Remedies. They were found it to fail; but it ought to be used on the very first Symptom of the disorder making its appearance, before the inflammation hath arrived at any height. for if the use of it is delayed untill the inflamation hath become considerable, it gives the Patient very great pain & agony: The Solution should be weak, & no stronger than that it can be readily borne when tasted, without communicating any pain or much heat to the tongue

In the common method we now order the antiphlogistic regimen & course: That is if the patient be strong & vigorous we order bleeding: keep him on a low Vegetable & milk Diet, keep his body open by gentle mild laxatives & into the Urethra we inject oil of Olives or what I have constantly found to answer better about ℥j of Mercurial Ointment prepared w.th Turpentine or any other acrid substance dissolved in ℥viij of Oil of Olives & injected into the Urethra Morning & Evening: the whole of this course tends to lessen the Inflamation. It is improper to give violent or acrid purgatives, for these irritate the rectum: this irritation is communicated to the bladder & Urethra, when it never fails of aggravating the disorder. It is best therefore to keep the body open by ordering the patient about ℥j of Glaubers Salt three times a day & perhaps every other Evening a little Lenitive Electuary or Castor oil or some other Medicine y.t will operate w.th Irritation. Warm fomentations or immersing the penis in warm Water two or three times a day, likewise contributes much to lessen the inflamation: When the Ardor Urinæ is so very great that y.e patient cannot make Water w.th very great pain & uneasiness, Morgagni an Anatomist & Physician of Eminence in Italy, advises the keeping the penis for some time immersed in warm Water, & to let the Urine pass off gradually: he observes that this never fails of giving considerable relief. Fomentations also greatly alleviate the Chordee which is an exceedingly troublesome Symptom: when it is violent, topical bleeding on y.e penis or in the perinæum, especially w.th Leeches seldom fails of mitigating the pain. We should be very careful what kind of oil we employ for Injections, for ~~if it is old & rancid, it~~ by age oil becomes acrid & rancid when instead of alleviating it will heighten y.e inflamation & uneasiness

I ~~am~~ should take notice that in my own practice I have for some years entirely dropt the use of Injections of any kind & have trusted the Cure entirely to small Repeated doses of epsom salt with ½ gr. of Grain of Tartar emetic & ½ grain of Calomel in each dose, twice a day: confined ye. patient to a strict Regimen & where the scalding is very considerable, prescribe Powders of Gum Tragacanth & Gum arabic. by which the Patient hath always been effectually relieved & in as short a time as if Injections had been used. — ~~The~~ I have commonly observed that in ~~the cases when~~ Disorders of the urinary passages & urethra where my assistance hath been required in consequence of venereal infection it generally happened in those cases where Injections had been employed for the cure of the original disorder, & this had me to suspect that Injections were often the immediate cause of Caruncles, constrictions & ulcers in the urethra, the apprehension of which hath induced me to lay them aside, especially as the disease may be as effectually & speedily cured without them

I have lately had a case which strongly confirms the injuries that at times attend the use of injections. A Gentleman who had been several times cured of a Gonorrhea by a weak solution of sublimate in water injected into ye. urethra, had recourse to the same remedy on receiving

ye. disease. When the inflammatory symptoms are thus removed, which I never knew to exceed a fortnight when ye. disease was treated in this manner, but a white pellucid discharge of mucus still continues we may check this by moderately astringent injections: For this purpose a weak solution of white Vitriol eg. Dij in ℥ij of water, ~~seldom~~ fails answer extremely well — During the inflammatory stage we should by all means endeavour to lessen the acrimony & sharpness of the urine: for this not only gives great pain, but increases the inflammation: The patient ought therefore to drink plentifully of some mild liquids: for instance Cream or Milk & water: an emulsion of Gs. arabick: & the an Infusion of Marshmallow or linseed: If he drinks plentifully of these or either of them, it will greatly increase the quantity of Urine, dilute its acrimony, diminish ye. scalding & render ye. discharge more free & is. much less pain — The Chordee may also be alleviated by keeping the penis tied down during sleep: & if it is very violent, ordering an anodyne at bed time: For the violent distention greatly adds to the inflammation, & ought therefore if possible, be prevented. ✠

A confirmed Lues often appears in various shapes, so as often to require ye. utmost attention to distinguish it properly: there are Instances of its having lurked for many years in the System, before it produced any bad effects: May we have examples where it afflicted Children, on whom it was entailed by their parents, whilst these at the same time suffered no inconvenience from it. When the disorder appears in bubos, ulcers, spots or efflorescencies there is no great difficulty in distinguishing it: In general this is the course of the disease: Bubos appear in the conglobate glands: Sores breaks in the head & joints of the extremities, is at little or no Intermission or even remission; but they are always worse when the patient is heated, particularly in bed; & remit again upon his

the injection. It was apparently effectual in relieving him; but a few days after he was attacked with a fever, and a painful sensation & tension in the abdomen & across the region of the pubes with a slight obstruction in his urinary passages. I suspected the injection to have been ye cause of his whole frame being thrown into disorder, and therefore ordered bleeding & antimonials with a very small quantity of Calomel, which in a few days abated his fever & pain; but the gonorrhoea returned with as much violence as before; and the uneasiness at the neck of ye bladder hath not yet been perfectly removed, & it is possible he may experience ye some ill effects for ever after.

A curious case was communicated to me lately by a Physician in this City: A Gentleman who had been twelve years married applied to him for a complaint in the bladder, which on examination proved to be an ulcer in ye neck of that organ. The Patient had had the venereal disease before marriage; but never had connection with any woman but his wife from ye time he was married: The disorder had continued twelve years, but notwithstanding ye time it was treated as a venereal complaint & perfectly cured.

growing cool, when he retires, or when a sweat breaks out: his Mind is depressed & his strength gradually impaired: pustules appear on the Skin particularly in the face & forehead: the scabs are of a yellowish colour. In process of time, as these symptoms increase & extend, ulcers are formed in ye. periosteum of ye. head Arms & Legs, which at length affect the bones of these parts & render them carious. Phagadenic Ulcers show themselves in the Throat & by degrees attack the bones of the palate & Nose: sometimes there is a discharge of the venereal Virus from ye. Eyes, Ears & Lungs, which become inflamed & ulcerated: hence Loss of Sight & hearing: a difficult respiration & fœtid breath: At length all the animal, vital & natural functions are debilitated: a hectic fever comes on, which gradually wastes the patient untill Death closes the Scene ——

Hitherto Mercury hath been found a sovereign remedy for the cure of this disease: & it is only w. regard to the best method of administering this medicine that Physicians differ. Upon the whole we may take this for granted that the most simple preparations of Mercury, provided it is well triturated, and the mildest seem to answer best: For tho by ye. addition of Acids the mercury is rendered more acrid & stimulating, yet it does not exert any greater Virtues in expelling the disease than the mercurial pill or Ointment. Sometimes indeed the acrid Solutions of ☿ will sooner alleviate the symptoms & even cure the disease more expeditiously. If the Disease is principally seated in ye. exterior parts of the body, acrid stimulating Solutions of ☿ appear to be ye. proper: as they draw a tendency to stimulate all ye. diff. excretories, and are therefore in a manner immediately applied to the parts affected: In such cases therefore & where a salivation is not to be brought on, Van Swieten's Solution of Sublimate affords us the proper remedy: But if we have reason

* and particularly where there is a disposition to consumption

** By combining opium & sublimate we determine ye. operation of the latter more effectually to the skin & reap the good effects of it in the most easy manner. About 1/3 of a grain of sublimate may be combined with a grain of opium & formed into a pill for a dose, to be repeated twice or three times a day. I have of late employed the sublimate frequently in this manner, & with very good effects, tho this composition will affect the mouth, particularly in cold weather when ye. operation is with more difficulty determined to the skin. Caustic Alkali will decompose Sublimate & ~~render the m~~ by uniting with the muriatic acid & thus rendering ye. Mercury inert; it is therefore ye. most proper Remedy where Sublimate hath been taken, either through mistake or design, in too large a dose: If ye. Alkali is not at hand, a strong Lye made of Ashes & water will answer ye. purpose. In ye. ed. med. commentaries we have cases related where the Alkali proved an effectual antidote. It teaches us also a caution in our method of administering sublimate, for we may be assured that if we unite any alkali with sublimate we destroy ye. effects of the latter in proportion to ye. quantity of alkali that is united with it.

to think y. some of the internal parts are affected, these acid ~~fr~~ptions of Mercury are less proper, than those whose operation is milder: the milder ~~opt~~ ~~fr~~ptions also remain longer in the system & therefore act more powerfully in destroying the venereal poison. Salivation coming on in consequence of using sublimate, is generally more troublesome than when ~~are~~ brought on by y. milder ~~fr~~ptions: the inflammation in the Mouth is sometimes so violent as to threaten danger. We should however always avoid Salivating y. patient if we can: It seems to be the universal opinion of physicians that Salivation is only employed, because it is the most certain Criterion of the Mercury having taken effect. We might however produce the same effect & without the disagreeable circumstances y. accompany a salivation, or y. bad consequences that often follow it, if we were to give the milder ~~fr~~ptions of Mercury in small doses: keep the body & chamber of the patient warm: & at the same time order him to drink plentifully of a decoction of Woods or other warm drink to open the pores of the body & determine the mercury to the Skin: He might also use the warm bath once a day, which would more effectually cause a determination to the Skin & at y. same time contribute greatly to the cure. A few years ago Mr. Planck of Vienna published a treatise in which he gives us a ~~fr~~ption of Mercury w. Gambich, y. he tells us is not apt to salivate: I cannot however agree w. him: for I have seen it salivate several patients, tho it is perhaps longer in producing this effect than blue or some of the other ~~fr~~ptions of Mercury: This Medicine would however seldom Salivate, if the above rules were complied w. by the patient. — If there are buboes in the Glands these should be discussed by mercurial frictions applied about half an Inch below the bubo, & not immediately upon it: for the lymphatics in the tumor cannot absorb the ~~y.~~ whereas if the ointment is applied immediately below the swelling it is then absorbed & carried directly into the Gland. Some physicians advise

A Vegetable was last Summer sent to me by Dr. Goulding from Barbadoes with an account that it was there used in every stage of the venereal Disease & was generally found effectual in relieving the disorder. — It was tried in one or two cases at ye Pennsylva Hospital while Dr Rush was in attendance last Summer & apparently with favourable effects; but as there was but a small quantity of the Remedy sent, there was not sufficient to ascertain the efficacy of it in a variety of cases to form a positive opinion — It appears to be a species of Euphorbia & I expect to be furnished with a ~~sufficient~~ quantity ~~to~~ sufficient to ascertain its effects in this disease. — All ye species of Euphorbia are active vegetables & as we have some growing in this country I should expect they would in all probability possess similar virtues with the westindia plant —

that y. Bubo should not be discussed, but suffered to come to a suppuration,
upon the supposition that there is less danger of the infection being com-
municated to the Mass of fluids if the bubo is allowed to suppurate;
but this is erroneous, for there is more danger of an absorption dur-
ing the suppuration & after the matter is formed, than if it be destroy-
ed in the beginning by mercurial remedies. Mercury tho' a so-
vereign remedy in this disease is not the only one: I formerly mentioned to
you that Kennedy's decoction or the Lisbon diet drink did ~~they~~ cured the
disease effectually & speedily. We have likewise several plants growing in
this Country which are said to cure the disease effectually: The Indians
communicated the remedy to Sir Wm. Johnston & he informed Mr. Kalm
Professor of natural history in Sweden, who about 30 years since was sent into
this Country by y. Academy of Sciences at Stockholm for the improvement of know-
ledge. He describes the remedy in y. transactions of y. swedish Society, & gives y.
the following history: The plant appears to be a species of y. Lobelia & is by Linnæus
called y. Lobelia syphilitica & grows in every part of the Continent. The
Indians take the roots of 4 or 6 plants, more or less, according to y. violence of
the disease: these they wash & cleanse very well: some advise the fresh
others prefer the dried Root. They boil the above quantity of y. roots in about
3 quarts of water. The patient is to drink a mess of the decoction in y.
Morning as he pleases, & is also to use it for his common drink in
the day. But if it proves purgative, which is frequently y. case, he is to
diminish the dose in such a proportion as to avoid this inconvenience.
He is not to indulge in the use of spirituous Liquors: to live on every thin
sparse diet, chiefly on vegetables; sometimes however he may eat a little meat.
He is to continue in this course for a fortnight or three weeks, and at the
same time wash the ulcers &c. if he hath any, & it seldom happens
but the cure is compleated in that time. But if the disease is very
virulent they add a few of y. Roots of the wild Tranenicular to y. de-
coction of the Lobelia. This both vomits & purges & is generally effectual.

I have had but one opportunity of trying the effects of Mercury in a case of this kind & this was ~~some~~ about 3 years ago. a child had been bit by a dog said to be mad & who was immediately killed as he had bit several dogs which were likewise destroyed. The child was rubbed w.th the mercurial ointment ~~wt~~ in considerable quantity upon the sore twice a day for a fortnight, at the end of this time, the sore being healed up & the child continuing well, the medicine was discontinued. I must however ~~by~~ ~~so~~ repeat an observation which I once before made, that People's fears sometimes induce them to consider a dog to be mad when perhaps there is no foundation for the opinion, & I am not certain but this may have been the case in the present instance.

I must also observe that from some late observations of Dr. Mathgill on the Hydrophobia I find that neither this or any other Medicine yet discovered is a certain remedy in this disease. It is not many years since a Gentleman ~~lately~~ in England dispersed a Powder which was esteemed infallible for the bite of a mad dog both in Man & Beast; the Medicine I find for several years maintained an undoubted reputation; unfortunately however a Gentleman in London was bit by a mad Cat & tho he had immediate recourse to the Medicine he was soon after seized with the Hydrophobia of which he died.

Mr. Shalm further tells us that he knew a person who had some years before been in imminent danger of his Life from this disease; but was cured by an old Indian Woman. He had still some of ye roots & plant remaining by which he had been cured; & on shewing them to Mr. Shalm, he discovered them to be the Lobelia Syphilitica: From this account it appears that we have a Vegetable of at least equal virtues w. the Mercury for ye cure of this disease, without ye disagreeable circumstances & danger ye attend a salivation. We are well assured ye pox is not an uncommon disease among the Indians; & it is equally certain they have no Mercury wherewith to cure it: and they frequently even cure white persons who put themselves under their care. It was long doubted whether any Vegetable substances could cure the venereal Disease; but the Lisbon diet drink hath now removed this doubt. & we may therefore w. more confidence rely on the account communicated to us through Mr. Shalm ——

#

Mercurial Ointment hath been greatly recomended for ye bite of a mad dog by Mr. Jessault in his Dissertation on ye Hydrophobia: & de Choiseul a Physitian & Apothecary to the Society at Pondicherry, in his treatise which he published in French at Paris in ye year 1756 under ye title of a short & easy method to cure ye Hydrophobia occasioned by ye bite of a mad dog, assureres that he knew no less than 300 persons cured by the use of mercury. It seems this disease hath also been confirmed by ye celebrated Sauvages of Montpellier. From these & many more united testimonies we can scarcely entertain a doubt but that Mercury given internally & applied externally affords us a good remedy for this dangerous & dreadful disease: It should be applied immediately after ye bite is received & continued untill it brings on a slight salivation; for after the Hydrophobia is once come on the patient hath generally but a short time to live & little or nothing can be done for him; the above gentlemen however relate instances of this disease being cured after the hydrophobia had come on ——

Mercury is also employed for a number of other diseases & generally in all kinds
of Obstructions & fores: In a former Lecture I mentioned to you its use in
Scrophulous scirrhus's & fores; but at ye same time told you it being hurtful
in all genuine Cancers & scirrhus: It is employed to advantage in
scirrhous obstructions in the Viscera & ye diseases arising from this cause
since it hath lately been to be employed to singular advantage for
the cure of Dropsies; which by what I told you in my last Lecture appears to
oftener owing to obstructions than almost any other cause: &
shew Mercury not only acts by resolving the obstructions, but by its
universal Stimulus excites ye action of the absorbents & encreases all
the different secretions. — It is also employed in old foul Ulcers & fores
shew by its stimulus it gives that kind of Inflamation to ye parts ye
is requisite for ye formation of good pus. Its use in killing & destroying
of Worms was explained under the head of Anthelmintics: a repetition is
therefore superfluous. Crude Mercury hath been recommended in certain
diseases & particularly in violent obstructions of the bowels: For this pur-
pose it is directed to be taken in doses of 2 or 3 pennies at a time & con-
tinued untill the patient hath swallowed a pound or more, ye by its
weight it may force a passage & thus remove the obstructions: it is
however a dangerous experiment & in these obstructions and very frequent
by owing to what is called a Volvulus, or when the superior part of the Gut
intestine is received into ye inferior, any purgative from above might
infallibly encrease the disorder, & if it be very violent it may even
occasion the Gut to break: A case bought therefore to be desperate
indeed before we have recourse to so ambiguous a remedy: When
the obstruction is owing to hardened fæces, emollient injections
have a much better chance of giving relief, than this remedy —

Yaws are a disease that in many respects resemble the Venereal distemper; it is evidently not ye same disease: they occur freely on the Coast of Africa, and are very common in the highlands of Scotland, where they are attended with ye following symptoms: The patient complains of a pergent pain in ye throat with slight difficulty of swallowing: In ye Morning his Mouth is dry, with a peculiar odor: & glandular swellings appear under ye Lower Jaw. These symptoms will frequently continue for several Months without any manifest alteration: after which there appear pustules about the bigness of a pea at ye root of the Tongue: these are succeeded by eating Ulcers in the Throat which extend themselves over the whole palate. They Eyes & Ears likewise become affected: they former grow red & inflamed: the latter are affected with pain & continual noise: Afterwards eruptions appear in the other parts of ye body, particularly in the back, Groin & Genitalia which soon degenerate into foul Ulcers & discharge a thin sanies. These by degrees run together & form one or more large Ulcers, attended that are extremely painful & accompanied with an intolerable itching This is the general course of the disorder: tho all these symptoms do often not occur in the same person: Sometimes the Mouth & fauces only are affected without any other sign appearing: at other times the Groin, privates & Groins are only attacked: & sometimes, tho early, ye patient is tormented with internal pains in the bones; exostoses & decays of these parts, especially if the disease hath continued for a long time: these shews the great similarity & affinity that there is between the Yaws & the Pox & is sometimes more infectious than the Venereal disease: & there are instances of persons catching it by drinking out of the same cup with an infected person: tho there are at the same time instances of one or two persons in a family escaping the infection, whilst every one besides laboured under this disorder

It requires nearly the same method of cure as the pox: viz: internal & external applications of mercury, & drinking plentifully of a decoction of the Woods: in general it is not so tedious to be cured as the venereal disease; but then it is frequently apt to return again in a few Months; tho it is generally milder & easier cured than a fist.—

In my last Lecture I treated of the Virtues & effects of antimonial preparations as Emetics: ~~to~~ and am now to treat of the other substances that possess an emetic quality: I have however but few remarks to make on this head; for as all emetics ~~are~~ are similar in their operation: what is said of one applies in every respect to the others. Ipecacuanna: This root is y^e. produce of the southern parts of America, where the Natives employ it as an infallible remedy in the Dysentery, to which Disorder they are much subjected: It was at first even in Europe supposed to possess some specific Virtue for the cure of this disease: but more accurate observations demonstrate that any other emetic will answer the purpose equally well ~~when~~ It is quicker in its operation than Tartar emetic, & therefore where a sudden evacuation is necessary, we should prefer the Ipecacuanna. The dose of this powder is from gro to a scruple or more: You are however to take notice that the small doses will excite Vomiting, yet they never produce those copious evacuations & emulge the glands in the stomach, as a large one will do. The safest method however of giving it, is to divide twenty grains into three equal parts & let the patient take one of the powders, if it produces no effect in a quarter of an hour, let it take the second dose; if this does not vomit them in 10 or 15 Minutes let it take the third: & this seldom fails of vomiting him: this method is particularly proper for Children & Infants: in which case we divide from 3 to 6 grains into 3 doses & administer them in a similar manner. By observing this method, we seldom or never produce too much Vomiting or straining, but can always adapt the Evacuations to the strength & constitution of the patient. Persons who are apt to strain much in Vomiting

should ~~be~~ tie a Napkin or handkerchief round the abdomen: No liquid should be taken immediately on swallowing an emetic; but always directly after every evacuation: by which the drink is kept for some time on the stomach and dilutes the viscid matter lodged in that organ; & thus ~~quickly~~ adds to the good effects of the Vomit. Large & seldom repeated ~~draughts~~ potations are preferable to small ~~draughts~~ & frequent draughts. Camomile tea is more advantageous than warm Water, especially in weak & relaxed Stomachs: it also encourages the Vomiting, and if any quantity remains on the stomach it is soon carried into the Intestines & encourages the evacuations by stool: In putrid diseases it is highly proper on account of its antiseptic quality. It is not necessary for Infants to drink much; for they abound with humours: for which reason also they vomit with much more ease than grown persons. We order Emetics in the 1st place to prevent diseases: eg. Scarlet, putrid & petechial fevers: likewise in the beginning of almost every fever, provided they are not ~~attended~~ accompanied with topical Inflammations; & especially if they are attended with Nausea, foul Tongue, bitter or disagreeable taste in the mouth, Giddiness & headach. In robust strong constitutions it will be prudent to premise bleeding: 2. We order Emetics during the eruptive fever in the Small pox & Measles; provided there is no sign of a topical inflammation: It is observed that emetics & gentle Laxatives contribute more to lessen the fever in the Smallpox than bleeding, without impairing the strength of the patient. Of their use in putrid diseases ~~and~~ we shall ~~treat~~ perhaps have an opportunity of treating more particularly in a future Letter. Emetics are also usually indicated in Intermittents: the best time of giving them, if the patients strength can bear it, is immediately after the paroxysm, for then they contribute much to a compleat solution of the Spasm & will at least make the Intermissions regular.

The French physicians prescribe ~~them~~ ~~an~~ Vomits in the severe Apoplexy & Lethargy; this cannot however be a precarious practice; for during the efforts of vomiting the blood is accumulated in the head & brain, wd. may be attended wd. a rupture of some Vessel. 5. When a person hath overeat himself or committed a debauch by drinking too freely: likewise if he hath taken improper or indigestible food occasioning crudities & bad consequences attending them: eg. pain in the stomach, Nausea, oppression, Vertigo, headach, Faintings & Convulsions: speedy relief is necessary in this situation. All tightness from bloathe & Collars should be removed: the person laid high with his head: A Vein should be opened in robust persons: and a Vomit be immediately given: sometimes there is scarce time for it, then we should excite Vomiting by ~~tickling~~ irritating the Mouth wd. a feather or finger: An acrid Stimulating Glyster should be at the same time administred: for the attack is only to be lessened by evacuating the contents of the stomach by purgatives or ~~the~~ more effectually & speedily by Vomits. These Attacks of this kind often proved fatal, & the person is said to die of an apoplexy: but this is by no means the case, and we may readily distinguish it, by a small low pulse, the breathing not attended wd. snoring, a puffed up stomach & its coming on when the stomach is overloaded wd. drink or food. Vomits are also useful when Children are troubled with Worms & are thrown into Convulsions: Antimetic ~~is~~ in this case affords an infallible & speedy relief: Sometimes they will expel Worms: but they will at least procure a respite during which we can give the proper Vermifuges. Vomits are also necessary when a person hath swallowed poisons: If there be Vegetable, & taken in Salads or greens, with a pain in the stomach, nausea & ~~vomit~~ cold sweats, faintings & Vertigo, the patient should take 20 or 30 grains of Ipecacuanna, drink plentifully of warm Water, Gruel or any other mild liquid that is shand: also to tickle & irritate the Mouth wd. a

a feather or finger so as to produce sudden & copious Vomiting. After the
Vomiting the person should drink plentifully of Water acidulated w.th good Wine
Vinegar. When a person hath swallowed Arsenic he feels a burning at the Stomach
as if ~~he had~~ a coal of fire were lodged in it. The Mouth, fauces, oesophagus
& Stomach are quickly inflamed: In this case Vomits are improper
as they contribute to the irritation & Inflammation: but we endeavour to
envelope the poison or at least defend the coats of the Stomach from y.e effects
of it, by ordering large draughts of Water, Oil, melted butter, Cream &
Milk; by w.ch we endeavour to promote Vomiting, which may also be
excited by irritating the Mouth & fauces w.th a feather: If the patient's life
is by this means saved, he should for a considerable time live altogether
on Milk, vegetable Broths & Cream — to counteract the effects of the poison
if any portion should have remained or hath been carried into the Intestines.
Vomits are also useful in Asthmas, whether they are spasmodic or chronic.
In the spasmodic Asthma we order from 15 to 20 grains of Ipecacuanna;
if one; in the chronic or humoral Asthma we prescribe from 3 to 5 grains in
the Morning or every other Morning & continue them for some time. The
good effects are not owing to the vomiting that is produced; but to y.e
anti spasmodic & diaphoretic Virtues of the Ipecacuanna; by which
the perspiration is encreased, & the determination to the Lungs taken off.
Ipecacuanna hath also been ordered with advantage in Hemorrhages from
the Uterus & Lungs. In the former it is frequently employed, and seems
to produce its good effects by taking off Spasms, Irritations, & determining
the blood to the Vessels on the Skin. In the Hemoptoe hath
always been reckoned ambiguous. Dr Bryan Robinson however assures
us he frequently found it effectual in spitting of blood: Prejudice however
is so strong against emetics in this disease, that I had near dared
to prescribe them: tho in my own Mind persuaded they might in fact

ticular cases be employed with advantage. We find that physicians have in all ages advised Voyages ~~to~~ sea to persons subject to hæmoptoes & consumptions, without any apprehension of danger from the seasickness (as it is generally called) with the Vomiting & straining attending it, which is much more violent & of longer duration than what is produced by taking an emetic. This may at least be used as an argument in favour of giving Ipecacuanha in these cases: I would not however advise a young practitioner to lay himself open to popular prejudice: he will indeed often have occasion to say melioro novi, deteriora cognovi. — Vomits smell of Ipecacuanha are very useful in pleurisies & peripneumonies, when the expectoration ceases ~~and~~ the patient is threatened w. immediate suffocation. But Vomits are improper for persons of so weakly a constitution that they cannot bear any violent evacuation. I must here, over observe to you, that Vomits weaken much less than ~~with~~ purgatives, for the evacuation ~~from~~ the former is confined to the stomach, whilst the latter in some measure extend their effects to the whole system. They should not be given to hysterical Women ~~or~~ during the paroxysm of the hysterics, nor to persons under violent agitations of the mind. Robust plethoric persons should always be bled, before they take an emetic. Neither should Women take Vomits ~~during~~ at the menstrual period, or during pregnancy & childbed; unless there are very urgent symptoms that indicate their use. Persons labouring under a hernia should also be very cautious how they take emetics; & should at least use bandages when Vomits are absolutely necessary. Nor should people subject or disposed to apoplexy, make use of emetics. And in Inflammations, of the stomach, Bowels, Diaphragm, Bladder, Brain &c. they are inadmissible

The next class of Evacuants are Cathartics, comprehending such Substances
as encrease the evacuations by Stool. They evacuate ye ordinary & natural Con-
tents of the Stomach & Intestines; excite a more active peristaltic motion,
by which there is greater determination of humours to the bowels: hence
they encrease the discharge of fluids from the Liver, pancreas & all ye other
glands in the Intestines: also stagnating serum in the bowels, & from
lessening the quantity in any particular part, they encrease the absorp-
tion, & upon this principle are serviceable in Dropsies. From y^e
irritation they produce in the Intestines, & ye evacuation of their contents,
they invite a greater quantity of blood into the descending Aorta & its
anastomoses: hence purgatives are frequently useful in headaches, apo-
plexies & other diseases of the head y^e are owing to or aggravated by a
too great determination of blood to that part. And by inviting the
blood to the ~~lower~~ inferior parts of the System they encourage the discharges
from the uterine & hemorrhoidal Vessels. The greater part of purgatives
have a stimulant quality for which reason they are improper where there
are any signs of Inflamation in the bowels: Many of them also extend
their stimulating effects over the rest of the system & on ye account are
hurtful in inflammatory disorders. If they are given frequently they
diminish the tone & sensibility of the Intestines; also frequent use of
them render the Intestines liable to irregular & spasmodic affections, as
they irritate the rectum they are often the cause of Piles being produced,
& particular purgatives seldom fail of this effect if they are taken often.
For this reason too they encrease the pain & swelling of the piles, if they are
given at a time when the person is ~~from~~ afflicted with this disorder. This irritation
is also sometimes communicated to the Ureters & Bladder & hence aris
purgatives particularly are apt to occasion a strangury: We shall
however under each particular article take notice of any peculiar
advantages or disadvantages that it possesses

Purgatives are properly divided into 2 classes: Under the first are comprehended the gentler Laxatives & Aperiens: or such as operate w.out any manifest Stimulus. Under the second we rank those of y. more acrid kind & operate in consequence of the acrimony & stimulus which they contain. Under the first head we rank the sweet fruits as Raisins, Prunes, Tamarinds, Cassia fistula, & some acescent vegetables. In highly inflammatory fevers or even in other cases where our Intention is only to keep the body open w.out weakening the strength of the patient, these are the most proper. For this purpose the following laxative cooling drink answers extremely well. Boil Tamarinds & Prunes of each 3 ℥. for a quarter of an hour in Water q.s. to 6 ℥. of the strained decoction we add 2 ℥. of the syrup of black Cherries: This I say affords us an elegant & useful laxative drink, that is extremely well adapted to keep the bowels open and diminish the febrile heat. Next in order we may place Manna & Sugar: I believe the former hath few qualities that entitle it to be preferred to common white sugar. They are both subject to an active fermentation in the Stomach, & liable to produce flatulencies & other disagreeable symptoms in the bowels: I have known Children of delicate constitutions & weak Stomach thrown into faints & convulsive fits on taking a dose of Manna: its use is therefore very properly greatly declined of late, especially as it is an expensive article & w.out any qualities that render it particularly useful. Next in order we place all the mild, bland expressed oils. The oil of Olives & Almonds were formerly sometimes used as laxatives; but since the Castor oil hath been introduced into Medicine, ~~all~~ none of the other expressed oils are now given in this intention. Castor oil affords us an excellent sure Laxative, attended w.out little or no Stimulus: It is as certain in its operation as any purgative whatever and is not attended w.out any of the disadvantages, that most others are.

Seeds from which the Castor oil is expressed are of a poysonous virulent Nature & highly acrid & purgative; they were indeed formerly, before Jalap was known in Europe, frequently employed in Physick, untill a physician of some Eminence took too large a dose of them himself, and died under ye operation: from that time they were entirely banished from ye practice, and never made use of, untill a few years ago that ye oil was in ye Westindies discovered to be an excellent Cathartic & particularly useful in the dry belly ach. This Disease I formerly told you it was generally occasioned by some particles of Lead being taken into ye body, where it produces violent spasmodic symptoms: oily substances envelope the saturnine acrimony & therefore Castor oil is useful in a double intention. Castor oil is upon the same principle indicated in very disorders where there is violent Irritation & therefore extremely proper in all kinds of Cholics & ye Dysentery. Oils commonly pass unchanged from ye Stomach into the Intestines: a cathartic therefore of Castor oil will in the dysentery evacuate ye contents of the bowels, without increasing the pain & irritation, & yet oiling at ye same time defend the inner coats of the guts from the acrid matter lodged in the Intestines. We may therefore justly regard it as a most valuable acquisition to our Materia Medica and a Cathartic that is particularly adapted to Disorders of the bowels, which are generally local and in which most other purgatives are improper. In the hysteric, hypochondriac & all flatulent diseases we have not a substance to be placed in competition with this: for all stimulating purgatives are hurtful & ye valerian substances of all kinds diminish the tone of the bowels & therefore increase the oppression & flatulency in these disorders. — Castor oil is also ye prominent remedy for habitual Costiveness; for as it acts without Irritation it does not disposed to the piles; nor does it leave the body costive after its effects are over, which all ye other purgatives are very apt to do.

Sulphur is also a mild purgative & free from Irritation: it is therefore generally prescribed in the costiveness attending the piles. It is however much inferior to the Castor oil. Sulphur also on being long exposed to the air attracts an acid, when it is ~~& is then~~ very apt to gripe & without proving purgative: the washed flowers of Sulphur are therefore in general to be preferred. Mustard Seed is also a good purgative, particularly in a paralytic state of the Intestines where a constant moderate Stimulus is necessary to excite the peristaltic motion, by which the evacuation of the bowels is promoted: The Mustard is to be taken unbruised from one to 3 or 4 table spoonful a day, that is in such quantity as to produce the effects for which we intend it. Soap may likewise be considered as a purgative, for it frequently hath this effect when in inconsiderable quantities: It is not however by any means a certain purgative, & we therefore seldom prescribe it in that Intention. Next in Mildness to the purgatives just now enumerated we place the neutral Salts: The Epsom & Glauber Salts are the two chiefly used for this purpose; ~~they are~~ those which are heard in the Shops are improperly designed by those names: For the one is not prepared from the saline Waters of Epsom; nor is the other made according to Glauber's prescription. Both are prepared from Sea Water & from the Liquor which is left in the pans after boiling common Salt. The Glauber Salt differs in no respect from the Epsom, but that the Crystals are larger & on this account it is freer from impurities. Their irritation is confined to the bowels, where they produce large & copious Evacuations, without communicating their Stimulus to the rest of the System; & on this account generally used in fevers, when the patient is costive. Dr Mclaurin also recommends them in the Jaundice & obstinate Costiveness: For this purpose he dissolves 8 or 10 drachms in Water & orders the patient to take a few table spoonfuls every half hour until the desired effect follows. All Neutral Salts possess a sedative quality, this solution will therefore sometimes remain on the Stomach, when every other

Medicine is rejected by Vomiting. It is however necessary to give it in small & repeated doses; for a large quantity taken all once, it would not be retained in the stomach — I scarce know a better Medicine in inflammatory fevers than ~~a solution~~ a solution of Glauber Salt in Water; of which the patient is to take a couple of tablespoonful every 2 hours: It will generally act as a diaphoretic; diminish y. febrile heat, & keep the body open: which satisfying every Indication that occurs in those diseases, & much more effectually than the neutral Julaps & Mixtures that are usually employed for y. purpose. The account of their sedative refrigerating quality ~~& neutral~~ & saline purgatives are improper in all flatulent diseases of the bowels: for by diminishing the tone & strength of the nervous power they locally add to the flatulency & spasmodic symptoms attending it. We should therefore never prescribe them in the hypochondriac & hysteric disease: & if we give them in the Gout, they will be apt to occasion an attack of it in the stomach. We are next to treat of the mild & stimulating purgatives: One of the mildest of this class is Aloes, after the bitters & fetid Gums that we treated of formerly. — ~~Thus~~ Aloes is a purgative in general; it acts in very small doses, without griping & seldom produces above two motions: It is attended w. an inflammatory stimulus, and as it is highly bitter strengthens the Tones of y. Stomach & Intestines: There are therefore two particular disorders only in which Aloes may be employed w. advantage: In the hypochondriac disease, which is generally attended w. Costiveness, Aloes affords us a good laxative, especially if we want to bring on an evacuation from the hemorrhoidal Vessels: For it is apt to bring on the piles, even in persons not subject to them: Aloes hath a peculiar quality of irritating the rectum, by w. it determines a greater quantity of blood into the hemorrhoidal Vessels: This irritation is in women communicated to the Uterus; for which reason Aloes hath always been considered as an emmenagogue & is universally employed to suppress the Menses. The dose is from 4 grains to 5 taken morning & bed time, when it will

generally produce one or two Motions in the Morning. It may however in a great measure be confined to these cases & when there is an obstruction to ye passage of the bile into the Intestines: for by its bitterness it will in some measure supply the defect of ye bile, & prevent ye bad consequences which would otherwise ensue. — Balsamics likewise afford us excellent purgatives in particular cases: Under the head of Balsams we refer the Balsam Copaiva, Peruvianus, Turpentine & Guaiacum. They are chiefly indicated in spasmodic complaints of the bowels not attended w. fever. The Peruvian balsam hath therefore been frequently found useful in the Colica Pictonum. The balsam Copaiva & Turpentine are excellent in flatulent Colics attended w. Costiveness. Of this I had an Instance in a person to whom I had given various anti spasmodics & laxatives to no other purpose, but that of palliating the disorder: but upon his taking 4 grains of ye common Turpentine a day, he received more benefit from it than from all the other Medicines. —

Rhubarb. This valuable drug is to have the following signs, if genuine & good. It ought to be of a reddish yellow colour & dry; friable, but w. some hardness: with a compact: the roots ye in some measure resemble a horse's hoof are usually found to be ye best. On breaking it must be variegated with pale & white streaks or lines, in the manner of a Mutmeg. It should always be kept in a dry place, as it is very apt to be wormeaten. It hath always been esteemed an excellent remedy in Diarrhoea & dysentery, from its having a astringency combined w. its purgative quality. — In the dysentery it is not of the consequence that hath generally been imagined: for in that disease purgatives more certain & quicker in their operation, are found necessary; but in a Diarrhoea, which is owing to a weakness of the bowels, also in a chronic dysentery, owing to relaxed up by the same cause, Rhubarb affords us an excellent remedy. For in these cases we require a

Medicine that will gently evacuate the bowels, but at the same time strengthen the tone of the stomach & bowels. — In the fluor albus, the extract of Rhubarb we may be employed in the utmost safety & advantage: its adstringency is sufficient to diminish the discharge & its purgative quality will prevent the bad consequences that attend sudden suppression of that evacuation. In this disease we give from four to 8 grains of the extract in a day. These pills or a tincture of Rhubarb are also highly useful for persons who are apt subject to Indigestions, Cardialgia, Flatulencies, Colics & Jaundice. For by evacuating the tone of the stomach & bowels, the frequent returns of ye disease are prevented, and by its gentle stimulus the peristaltic motion is increased, by which the faeces are evacuated in a manner most friendly & agreeable to the constitution. Rhubarb is particularly adapted for the diseases of children; for their tender stomachs are apt to be loaded in Conditions & help them are carried off, soon occasion Vomitings & purgings: but by giving them from time to time gentle doses of Rhubarb we may prevent these consequences

folia Senna. This hath been reckoned amongst the milder cathartics, but it is one of the acrid & stimulating, and on that account commonly given in Infusion & Decoction. The Infusion is preferable to any other mode of preparing it; for if the Leaves be boiled ably for a short time the Medicine becomes very disagreeable, nauseous & more apt to gripe. But by infusing the Leaves in warm Water, and adding a small quantity of coriander Seed or Orange peel we in a great measure cover the disagreeable Smell & Taste of the Senna and at ye same time prevent its griping. But even prepared in this way it is by no means superior to many other purgatives, & inferior to many.

Jalap is one of the safest & most effectual purgatives kept in the Shops. A Watery Infusion of it purges the person gently without any or little stimulus. The dose to a grown person is from ℥ss to ℥ij in Powder. By boiling its purgative acrimony is evaporated & it then acts as a strong diuretic. It is the cathartic most commonly used in hydropic Complaints. The best method to give it for this disease is to add six grains of Calomel to 36 gr. of powdered Jalap & make it into 6 pills of equal weight, of which the patient is to take a pill every hour, until he takes the whole, unless the purging is too violent. By giving it thus successively we obtain advantages we can by no means expect if we give the whole quantity at once. For it is not so apt to gripe, its operation is more gentle & at the same time more effectual, by the stimulus being continued for a longer time, which occasions a greater effusion of the watery Serum. I have often seen it attended w. very remarkable effects in reducing the swelling, & greater than what could rationally be expected from any medicine whatever. It should however only be given in the beginning of the disease, before the strength of the patient is much wasted, when a sudden & violent evacuation would carry off the person at once.

Scammony. This is ye produce of a plant that grows near Aleppo & ye adjacent
Earth. It is collected in ye beginning of June, by cutting of ye top of the root
in an oblique direction. Under the most depending part of ye slope a shell
is fixed into which ye milky juice from ye root gradually distills: which
does not in quantity exceed ½ from each root. The Juice is afterwards
put together into some Vessel or receptacle & left to dry. Of the pure Scam-
mony very little is carried into Europe: it is generally adulterated w.th Wheat
flour, Ashes or sand. Pure Scammony is light, shining when broke, &
crumbles w.th the lead force when rubbed between the fingers. If put into
a glass of water it dissolves into a milky liquor of a greenish cast. The
colour of Scammony is various, from a jet black to a yellowish white, & is
no criterion of its goodness; the powder however of all good Scammony is
nearly of ye same colour & is a brownish white. It hath always been reckoned
a good hydragogue & an effectual purgative is only griping if given from
six grains to ½ in a watery emulsion. It is however generally added
to some of the weaker purgatives to increase their virtues. The pulvis
cornachini, in which Scammony is the principal ingredient, hath
at all times been celebrated for a safe pleasant cathartic, particularly
in hydropic complaints. Various methods have been proposed by phy-
sicians to render Scammony milder; this is however entirely super-
fluous; for it is in the first place by no means a violent medicine,
secondly we cannot render it effectually mild, but by giving it in
dilution & diminishing the dose. It is a misfortune that we cannot
have it pure & unadulterated. There are several species of this plant
that grow naturally in this country & greatly resemble the Convolvulus
w.ch yields Scammony: it would therefore be worth while to make the
experiment, whether we could not obtain this medicine from them; especially
as the root of our Convolvulus affords us a very gentle purgative —

Diuretica. Diuretics are intended to encrease the discharge by Urine & are therefore chiefly indicated in hydropic complaints: we shall therefore premise a few observations on the Nature of the Dropsy, which will enable us to judge to more precision of the use of this Class of Medicines in that disease. The proximate Cause of Dropsies has been very imperfectly treated even by Authors of most note. They may be referred under 2 heads. 1. Those y. depend on y. state of the fluids & 2. those y. depend on the state of the solids or vessels. As depending on the state of the fluids Dropsies may arise in y. 1st place from an increase of y. watery parts of y. fluids or 2dly from y. parts of the fluids being disposed to recede from each other so as ~~to increase~~ y. quantity being encreased. Dropsies depending on y. state of the Vessels may be referred under these four heads: 1. ~~to~~ Dly the state of the exhalent vessels Arteries. 2dly On the state of the Absorbents: 3dly of the Veins & 4th of the Lymphatics. We are first to enquire how how a particular state of the fluids may dispose to or be y. cause of a dropsy. The watery parts or serum of the blood may be encreased 1st by a great quantity of watery fluids being taken into y. body. 2dly By an imperfect Assimilation. 3dly By an obstruction of the a usual or natural Secretion. The first of these is easily conceived & frequently takes place. The second happens in consequence of some imperfection in y. Organs of Digestion, Chylification & Sanguification. The 3dly the watery parts of our fluids may be encreased by a suppression or diminution of any of the natural Secretions, owing either to an obstruction in the Organs of Secretion or some other Cause. It is therefore not uncommon for obstructions in y. urinary passages to produce a dropsy. An obstructed perspiration may also be y. cause of this disorder. But it ~~they~~ do not always follow that when these

tions are all suppressed in a dropsy, that we should consider them as the Cause of the disease; for it frequently happens that ye. suppression is ye. effect of the disorder, which may be owing to some other cause, & at the same time occasions a suppression of the Urine or perspiration. The second Cause of the dropsy I said consisted in ye. fluids being disposed to secede from each other. This is indeed more obscure than ye. former. Under this head we refer Dropsys which come in consequence of large Hemorrhages. There is not indeed a more frequent Cause of dropsies than a considerable or habitual hemorrhage, whether it proceeds from external injuries, or is spontaneous as the Menses; or hemorroid as the hemorrhoidal flux. The general weakness which is brought on the solids by ye. kind of evacuation hath indeed a considerable share in bringing on this species of dropsy; but independent of that, these hemorrhages, by taking off a large proportion of ye. red globules may give occasion to ye. separation of ye. diff.t parts of ye. blood at ye. extremities of ye. Arteries. — To this head we also refer all considerable & long continued evacuations ye. take off the serous fluids; for by this means ye. quantity of fluids is diminished & ye. System is weakened & this produces effects analogous to what we observed to happen from hemorrhages. To these causes we may add another where the dropsy depends on ye. rupture of a Lymphatic: & tho there is no secession of ye. parts of the blood, yet they are discharged & accumulated in particular Cavities somewhat analogous to this is the dropsy depending on Hydatides: when from any slight Accident a small blister rises on ye. Surface of some Cause; if this happens to be distended so as to break, a considerable quantity of fluid may be discharged, and even from so slight a Cause an Ascites may be occasioned. And tho these two last species do not properly class under this head, yet they do not belong to any of the other Heads, nor

do they deserve a distinct consideration. We in the next place go on to consider the Dropsies that depend on the State of the solids & in the first place are to treat of that which arises from a laxity of the exhalant Arteries. If the exhalants of the Arteries are relaxed we may easily conceive that an increased exhalation will follow; but the difficulty lies in observing & distinguishing y. particular instances in which this takes place. A much more common occasional cause is the obstruction of the Venous blood, which we shall therefore consider more particularly. As these obstructions to the return of the blood by y. Veins act by increasing the exhalations from it, they may be considered under diff. heads. 1. When there is a compression of the neighbouring parts from Ligatures, Tumors, Aneurisms &c. The 2d. obstructions are formed by y. return of the Venous blood by polypous concretions in the Veins. These may be formed in every part of the venous system; but they are seldom taken notice of, but when they occur at the beginning of the large Veins, e.g. in the Vena Cava & Pulmonalis and are very frequently attended w. a dropsy. 3d. Inaffection of the Coats of the Veins & all topical affections of the Veins also impede the free Circulation of the blood & give rise to the dropsy. I once saw an incurable & fatal dropsy occasioned by the Coats of the jugular Vein being thickened & thus impeding the free circulation of the blood. 4. Where large & considerable Viscera are affected w. Inflammation, & particularly those employed in the transmission of much venous blood, especially before the turns & hence Concretions are produced w. in the cavities from the surface of the lungs. Thus there are few Peripneumonies, but what a considerable quantity of Water is collected in the Thorax and it often happens that when upon the Violence of the Inflamation is relieved, a hydrops

lutoris remains. An Inflamation of the Liver may & often does produce the similar appearances in y. Abdomen. 5. Neither affections of any considerable Viscera are still more apt to have this effect; but in particular there are no Indurations of the Lungs without a general Dropsy. When the Liver is scirrhous the stagnation of y. Venous blood there occasions either an Ascites or Anasarca. It is the same when the Spleen is affected in this manner. The 6th. Lead is when the Veins are a plethoric State. Hence it is that Dropsies are more frequent in old persons than in young. To this head too may be referred all Dropsies occasioned by Obstructions of the usual Evacuations as the Menses &c. These obstructions of the Menses & piles often produce Languor & other symptoms of Weakness either by preventing a proper assimilation of the blood, or by putting the arteries into a more lax condition. We may also here add that the Venous blood is often retarded in its return to y. heart by its own gravity. This is the foundation of the oedematous swellings appearing in the lower extremities & being worse at night than in y. Morning: Lastly Undue Obstructions may be owing to y. Want of powers producing Motion, as in paralytic affections of y. Muscles; perhaps we may also add a palsy of the Veins themselves. We now come to the two ~~last~~ Causes of diminished Absorption. The first of these is owing to y. fault of the Absorbent Vessels; when they have lost their tone & do not absorb the usual quantity of fluids, by wch. these are accumulated in the cavities. We sometimes observe sudden Cures to be performed by spontaneous Evacuations & we have Instances of persons being totally relieved by voiding wd in Vomit from y. Dropsy: the evacuation of the Water is not to be thought the sole circumstance that takes place & effects the cure; but the tone is also at the same time restored to the Absorbent Vessels. The last Cause of a Dropsy is when considerable Obstructions are formed in the Lymphatics; this however is but a rare occurrence

These are the different causes of the Dropsy, and there is no species of this disease but what may be referred under one or other of these ye I just enumerated. Relief must therefore always be instituted according to the Cause that produced the disease: it is therefore a very absurd thing to lay down general Indications for the cure of a disease, that is freely owing to different causes & may require a very opposite method of treatment. But whether the Dropsy be owing to a diseased state of the fluids, or an affection of the Solids, Diuretics are always proper to give at least a temporary relief, by evacuating the humours, and thus allowing us time to do something effectual towards curing the disorder radically. But tho they are always indicated, they seldom are attended with the effect for which we prescribe them. Even when we give the strongest diuretics we cannot be certain that they will ~~be attend~~ encrease the urinary discharges; but if they do they always have a salutary tendency, for this Evacuation does not impair the strength of the patient, as Emetics and purgatives are apt to do; which tho they evacuate the Waters more speedily than diuretics, yet they at the same time by weakening the system encrease the elaboration, & thus contribute to ~~the~~ reduction of humours: but diuretics are not attended with this effect. We are therefore now to treat of the particular Diuretics: —

The fixed caustic Alkali is perhaps the strongest diuretic especially when dissolved in an Infusion of Wormwood, Camomile flowers or some other Bitter: for Bitters improve the diuretic quality of the Salt of Tartar. We may dissolve from ℥j to ℥ss of ʒj. Alkali in 8 Ounces of a Bitter Infusion & order the patient to take a table spoonful every 2 hours. The Bitter also in this case acts as a Tonic & will contribute greatly to strengthen ye System & prevent the future accumulation of humours. This preparation will

also have a tendency to induce obstructions in the Viscera, to which Jaundiced
Dropsies were frequently owing — Somewhat analogous in operation to
the caustic Alkali are the Ashes of Broom and other substances, which are
commonly used in hydropic complaints. They are generally infused in sherry
Wine or Cyder to neutralize part of the Alkali contained in the Ashes, which
might otherwise irritate the stomach. The patient is to take several table
spoonful at diff. times in a day, or repeat the dose untill the intended
effect is produced. The Ashes of Broom have been supposed to possess some
peculiar quality & have only accidentally been preferred in Dropsy; but they
do not deserve this preference & Ashes of Hickory Wood will answer equally well.
There are many Instances of this Medicine having effectually cured dropsies.
All Emetic & purgative Med.s may likewise by ~~boiling~~ having their activity
dissipated by boiling be rendered diuretic. Calap & Ipecacuanna become
powerful diuretics by being prepared in this manner —
The Seneka Snakeroot if given in large doses will vomit; if the quantity is some
what lessened it acts as a purgative, & when given in decoction it will prove
diuretic, diaphoretic & promote Expectoration; upon this foundation it hath been
used w.th advantage in pleurisies & peripneumonies, to promote the spitting
which is the salutary Crisis of these diseases of the Breast — It is also some
times used ~~for~~ in Dropsies, in which it hath frequently been found successful
It is not many years since Dr Storck first introduced the use of Colchicum as
a diuretic & employed it successfully in dropsies. It had always before this time
been considered a poisonous plant for w.th reason physicians were cautious in
prescribing it. It is indeed a highly acrid & poisonous plant, corresponding in Vis.
& quality w.th Squills. But for this very reason it ought to be employed, for
unless it were highly acrid, it could have little or no Virtue as a diuretic. The
order a syrup to be given of it. I have seen it tried several times, & it appeared
to have good effect tho it did not perfect a cure. It does not always act as a
diuretic: and as I before observed, it is but seldom that we can assure ourselves
of any medicine to be attended w.th this effect —

Within these few years the digitalis purpurea, or foxglove has been introduced into Medicine & on many occasions found to be a most effectual diuretic — It is a plant that grows spontaneously in England & the other parts of Europe, and is cultivated in several gardens in & near the city. Dr. Withering has wrote a treatise on the subject & published a variety of cases of the efficacy of this medicine. It has been found particularly useful in the Hydrothorax a disease which has hitherto been esteemed incurable, & we has moreover been confirmed by ye experience of others. Dr. Smith of Birmingham informs me that it has been ye means of saving the lives of several who must in all probability have died of a Dropsy in the breast if this medicine had not been employed — He at the same time mentions its having proved fatal to several before the proper method of administering it had been ascertained — Its effects are to act most powerfully on the urinary passages; when too much is given it creates a very high degree of nausea, vomiting & purging which will sometimes continue for several days; but is most effectually relieved by opiates. It likewise has a peculiar effect on the action of the heart & has occasionally diminished the pulse to 35 strokes in a minute & no doubt if the dose is too large it may arrest the motion of the heart altogether, yet it is probable that it has proved fatal in this manner. It has also been employed here & I have had an opportunity of attending to its effects in

Mustard, Horseradish &c. different kinds of Pepper, are in particular cases the best kind of diuretics: In scorbutic complaints they hold the first place: & when the Ankles & Legs swell from debility of the Vessels to propel the fluids, any of these early remedies taken in substance, infusion or decoction will answer extremely well. Mustard they is one of the best preparations to give a slight stimulus & excite a action of the moving fibres ✠

The next class of Evacuants is Expectorants, or such substances as promote expectoration. Innumerable almost are the remedies which are said to have this effect were we to trust to y. observations of medical Writers: but in fact there are very few if any y. deserve to be considered as expectorants in the strict sense of the Word: All stimulants, Emetics & purgatives may occasionally promote expectoration; but then we can never be assured of their producing this effect. Antispasmodics also frequently promote expectoration, when their bath been suppressed by spasmodic constrictions: There are however a few acid stimulants that have been particularly confined to promote expectoration in diseases of the Lungs.—

Sedera Senegra, Hyssop & Penny royal have always been considered as pectorals, but y. little or no reason — They may indeed prove useful as they are generally taken in warm infusions, by relaxing the parts particularly in inflamatory diseases of the breast. But Barley Water, Gruel or any other warm drink sweetned w. Sugar or Liquorice root will be attended w. at least equal good consequences in a pleurisies & peripneumonies: in the Confluent Small pox & every other disease in which the Lungs suffer and are obstructed, it is of great consequence to the patient to drink plentifully of warm diluent drinks; not only to relax the parts but to supply a sufficient quantity of fluid to keep the Mucus from becoming too thick when it is expectorated w. great difficulty: But we need not be anxious about the choice of Drinks: tho it is sometimes necessary to vary them not only to please the palate of the patient, but it hath the appearance of Art, which is the generality of people is no small matter

several cases — The first on whom it was tried is a boy about 14 years old who had a general dropsy attended with an effusion of in his breast, for which two gentlemen besides myself attended him. By using Calomel & other very powerful remedies for a considerable time we relieved him, but did not make a perfect cure, for he had several returns of his disease tho not in so considerable a degree. He took the foxglove at first in doses of 5 gr but this operated so violently by urine that it was not necessary to reduce it one half, & this in a short time relieved him effectually. — The other is the case of a gentleman from the westindies who came to this city for his health, & was by his Physicians in ye. Westindies supposed to have a collection of water in the chest. When I saw him he was oedematous over his whole body his legs considerably so, his abdomen distended considerably his urine in very small quantity, his difficulty of breathing so great as to require 3 or 4 grains of opium every evening to procure him some rest; which however was very much broken & disturbed. As every remedy that is usually employed in these cases had been already administered ineffectually, the foxglove was prescribed for him, but with very little expectation of success. The first dose however of 10 grains produced a very considerable effect both on his urine & respiration, & by continuing it about a week he was perfectly relieved of his swelling & difficulty of breathing; & continued so for some

Radix Inula; Elecampane. This contains an acid essential oil of an inflam-
-ing nature: A syrup or decoction of the root may be used in pituitous
diseases of the breast, when they are not attended w.th any symptoms of
inflammation; & y.e patient is almost suffocated from a load of matter, w.ch
the Vessels in the Lungs are not able to throw off: here stimulating acid
remedies answer properly: as they excite the action of those Vessels.
Squills are remarkably acid & an universal stimulant. In the stomach
they frequently prove emetic, & are often employed for y.e purpose: In the bowels
they prove purgative & are few commonly used in hydropic complaints.
They are also highly esteemed as a pectoral: for this purpose we ought to dissi-
-pate the more acid particles by boiling; by this means we prevent their im-
-mediate action on the stomach, & have a better chance of introducing y.e medicine
in a more considerable quantity into y.e mass of blood. We should therefore in
general use them dryed; and when we decide to extract the Virtues of the
Squills by Vinegar in order to mitigate its taste & acrimony, or whenever
we infuse it in Wine or Water, it should always be in a dry state: this
is indeed a general rule which we should observe in all Vegetable substances:
for unless they are previously dryed, their own natural juices will prevent y.e
menstruum from having any considerable effects on them. The Oxymel of
Squills is a disagreeable nauseous dose of y.e medicine: this & perhaps all
other preparations w.th Honey might well be thrown out of our shops. They have no
advantage over those prepared w.th Sugar & are very apt to disagree w.th y.e Sto-
-mach of many patients. The Vinegar of Squills sweetened w.th Sugar will a-
-fford us a more agreeable & at y.e same time a more certain remedy.
Squills are frequently employed in asthmatic complaints, in which their
good effects are generally attributed to their expectorant Virtues. But y.e
Asthma is in general a spasmodic disease, in which the Lungs and adjacent
w.ch spasmodic constriction y.e occasions the difficulty of breathing & other
symptoms attending this disease. It is indeed generally supposed that

time

that the phlegm or Mucus gets into the bronchia & prevents their being distended by air; 4 w.
is apparently confirmed by ye. evacuation or egection of Mucus after each paro-
xysm. This however is by no means conclusive; for the mucus is in this
case a sign that ye. spasm is solved, in the same manner as the sweat w.
succeeds the ~~cold~~ hot fit in a fever demonstrates the spasm to be over,
ome. If the obstruction & difficulty of breathing were owing to this Mucus, no-
thing could relieve the disease but ye. evacuating of it; but the contrary never
fails to take place, & nothing will remove a fit of the Asthma so quickly as any
spasmodics, particularly opium; which would be hurtful were ye. disease owing
to any other cause but spasm. The other symptoms attending the disease per-
fect confirm this opinion: the inflation of ye. stomach & particularly ye. copious
pale urine w. accompanies all nervous disorders, and the most convincing.
The opium, when we order it in this disease, should generally be combined
w. Squills; for these, after the operation of the opium is over, gently stimulate
the bronchia to evacuate the mucus that hath been collected during the
spasm & which might be ye. foundation for obstructions being formed in
that organ: I have ~~often~~ observed very considerable effects from this composition
not only in the spasmodic Asthma, but in many old coughs & catarrhs: the
opium in these cases takes off the irritation, whilst the Squills promote ye.
expectoration from being checked or suppressed. The Asthma humorale or
pituitosum, which is evidently owing to a collection of Mucus in the bronchia
contra indicates the use of Opiates, & ~~and~~ requires Vomits & Squills. This kind
of Asthma is however very easily distinguished from the spasmodic, by its
being a constant complaint, without any evident regular intermissions &
Exacerbations; whereas the spasmodic Asthma is a periodical disease, & de-
comes on at regular stated periods, or is excited by occasional causes & dur-
ing the intervals of the paroxysms the patient hath no manner of
Illness or complaint

days, when his abdomen again became distended, & there is every reason to believe that in consequence of visceral obstructions. His difficulty of breathing however is not returned, neither is there any swelling of the extremities but what is very remarkable, tho the medicine has since been administered several times it does not appear to have much effect on the urinary passages, nor does it make any impression on the swelling of y. abdomen. A third case in which it has been administered is that of a gentleman in Maryland, similar in many respects to y. former one, & I am informed has been attended w. equally favourable effects. — The dose of the medicine is to be regulated by y. effects it produces on the stomach; in general 5 grains once or twice a day will be found sufficient; it will be proper for the patient to drink freely of Tart Sassa or any diluting liquor in order to determine the action of the remedy to y. kidneys. When the swelling has been removed, a proper course of Tonics, especially Chalybeates, must be administered to strengthen y. relaxed vessels & system thus guard against the future accumulation of water —

Many other substances might be enumerated which have by Physicians been reckoned
pectoral, and employed in Diseases of the breast: this however is superfluous,
for by knowing the principles on which the action of Expectorants depend
you can never be at a loss to ~~judge~~ know what confidence you are to
place in the effects which are attributed to them.

Blisters: Hippocrates recommended Cantharides internally; but was unacquainted w. their external use; Aretaeus Cappadox was the first who applied them as Vesicatories; he orders the patient to drink Milk for three days to avoid strangury. From that time to the 17th Century they were little used, but they were again revived in Italy & have since been universal. The effects of Blisters are: that they excite pain: they increase y. quantity of fluids circulating through the part to which they are applied: they produce a discharge of liquid in the form of serosity: or they produce a discharge of pus. — The changes arising in the system from the effects of epispastics, are: Attention to the sensation of pain excited by y. application of y. epispastic: An increase of y. excitement in y. nervous ~~system~~ energy through y. system in general: An uncommon determination of blood to y. part particularly acted upon: A diminution of y. quantity of blood passing through the blood vessels in the neighbourhood of those in which y. flow of blood is increased: A permanent change in y. ~~state~~ mode of circulation: A diminution of y. quantity of circulating fluids: And a particular diminution of y. serous part of the blood. — Among the Individuals which may be referred to this class, there seems to be a foundation for establishing the following orders: Epispastica subcutanea: as examples of which may be mentioned, Sinapi, Alkali Volatile. 2. Epispastica Vesicantia. Cantharides. — Epispastica suppurantia. — Issues & Setons. In

Of the general use of Epispastics. In y. application of epispastics to use the indications deducible from their nature may be derived from the following sources: 1. From their effects as acting on y. nervous energy, in consequence of which they may be employed: to diminish violent pain: to take off y. effects of uncommon sensibility & to remove torpor. — 2. From their effects in altering the balance of circulation, in consequence of which they may be employed: to diminish the impetus of y. blood against any part

morbidly affected: And to diminish a morbid increase of action in Vessels different from those to which they are applied. 3. From their effects as producing evacuation, in consequence of which they may be employed: To diminish the quantity of circulating fluids, when too great for the state of the system at the time: And to evacuate morbid accumulations of serum. These indications may be illustrated & confirmed from considering the effects of this class of medicines as employed in cases of Sciatica, Hemorrhage, Apoplexy, Ophthalmia, Hepatitis & Hydrocephalus — We shall first speak of the particular uses of the Epispastica subsaccentia. The individuals referred to this order, from their nature, are not extensively fitted to answer the purposes for which the class may be employed. They are fitted to fulfill some indications from an action on the nervous system: On this account they may be employed for the removal of torpor: And they are for this purpose preferable to other epispastics when an effect is suddenly wanted. From the quickness of their effects they may also sometimes be employed to fulfill indications as changing the mode of circulation. From the degree of effect they produce they are applicable chiefly to those cases where slight & transitory changes are wanted: The constitutions to which they are principally adapted are dry spare habits & such as would be hurt by any degree of evacuation — Epispastica Vesicantia. The individuals belonging to this order are from their nature, adapted for all the indications to be answered by the class: They are particularly preferable to all others where evacuation is suddenly wanted. — From the degree of effect they produce they may be employed when the highest changes are necessary: They will seldom admit of being adapted to those cases where slight changes only are proper. The conditions of the system to which this order of the epispastics are chiefly adapted, are scrofulous & phlegmatic habits, the febrile state of life and acute diseases

Epispastics suppurantia. The Individuals referred to this order are, from their nature, adapted to fulfill some of those Indications which are to be answered by a change in the determination of the blood. On some occasions they may be of remarkable service for diminishing the impetus of y. blood in particular parts, if a very considerable effect is not suddenly wanted. They may be used likewise for some purposes to be answered by evacuation: They are not adapted to diminish y. quantity of circulating fluids; but they may be of service for evacuating serous accumulations, and are chiefly of use for this purpose, when these are deep seated, or in their nature such, that they cannot be easily acted upon. There constitutions in which they are particularly serviceable, are those labouring under chronic complaints & in y. decline of life. The cautions to be observed in y. employment of epispastics as derived from their nature, are chiefly w. regard to y. pain that is occasioned by their action, especially when that hath no tendency to a removal of the complaints; and to y. strangury which is a frequent attendant of their operation. The conditions of the system which chiefly require attention in their employment, are female constitutions, and lax or phlegmatic habits. The circumstances chiefly to be observed w. regard to y. species necessary repeat: The accomodation of y. diet & temperature to y. disease of the patient: The length of the application of the Vesicato, ies: The treatment of the parts after these are removed: And the continuance of epispastic applications in the suppurantia. The diff. Individuals belonging to this class of Med. are chiefly contraindicated in those cases where there occurs: A high degree of Irritability in the system in general: Morbid Spissitude of the blood: Or a general Inanition of the fluids.

After having thus premised some general principles on y. Nature of epispastics we shall treat of their particular use in ~~fevers~~ diseases: & first on y. use of Blisters in fevers.
When accompanied with an headach of a dull kind, especially if attended with a foma blisters, are very useful. When there is a local inflammation as in pleura, blisters are serviceable after bleeding. In a true peripneumony they do harm if applied before the pulse is brought down by bleeding. In continued fevers whilst the pulse is full & strong blisters do harm: in their decline when it is improper to take more blood, they are serviceable. Dr Lind hath ~~found~~ in some infectious fevers found, that blisters applied to the back in 24 hours after y. infection was taken, were serviceable, a vomit being premised; but seldom found any good effects if it was neglected for 2 or 3 days.
When there is a delirious tendiness, wild raving, staring eyes as if the patient were frightened, an uncommon sensibility of y. nervous System, no good is to be expected from blisters, tho the pulse is low: When a delirium comes suddenly, blisters are useful: they are more serviceable to persons of a dull phlegmatic constitution, than to those of a more irritable habit.
In children however, tho the Nerves are more sensible, blisters are of more advantage than in adults; probably because their Solids are more lax & the blood watery. — Blisters are good not only for evacuating the circulation; but for attenuating the fluids & exhausting the Serum. They also lessen the pain of an inflamed part when applied near it. Blisters have a double by drawing the humors from, & lessening y. pain of, the part.
In Coma & apoplexies they quicken the pulse, & when applied in Angina, pleurisies or hepatitis after V. S. they lower the pulse sooner than repeated bleedings. When a blister brings down the pulse we may form a favourable prognosis; but when by y. first blister it is not brought low enough, or rises again after it is taken off, we should apply a fresh one. We may form some judgment of y. disease by the Serum in y. blistered part: When it is yellow green or fœtid it shews the disease to be malignant & dangerous; when

thick & like a Jelly, the blood is sizy & obstructed in the capillaries. If the Skin is red, but white, when the cuticle is raised, it is a bad sign & Wine should be given plentifully. — It was formerly much the custom to apply blisters to y. back, but this part is more difficult to heal, troublesome to lay upon y. patient more apt to take cold whilst it is dressing, than when applied to other parts of the body. Blisters applied to the hand give least pain: and we commonly blister the inside of the legs, thighs or arms. In peripneumonies pleurisies, blisters to the back, but particularly to the side of the patient affected with pain. We may let blisters lay on 15 hours, except in delicate people; when applied to the legs 24 hours: to the head 2 or 3 days — A strangury is most frequently occasioned by applying a blister to the head when newly shaved; this however is prevented by it not laying it on untill 18 hours after it is shaved. We should not apply a blister to the head when there are red pimples for fear of a strangury. — By applying blisters to the leg or back we seldom bring on a strangury. Blisters in particular constitutions will sometimes occasion a tenesmus, vomiting & delirium. To prevent a strangury we give the emulsion of Hy. and Sick, Infusion of linseed, Milk & Water or other mild diluent drinks. Camphire was proposed as a corrector of Cantharides, given internally, & applied to the blister externally, but it is of no use. In delicate women, children & other persons of sensible Nerves we may apply a piece of Lawn or fine Muslin between the Epispastic & the Skin, this will not always prevent a strangury: It is always proper to use Lawn when we blister the head, for by this method we bring off any particle of the Cantharides. But we never use it to the legs or thighs except in delicate persons y. are subject to a strangury. ~~The~~ Epispastics will cause blisters, the oiled paper is placed between the Skin & them, and yet this will not always prevent a strangury

In the Angina or sore throat whether it be the putrid malignant, or simple inflammatory Angina, Blisters applied externally on the throat as near as possible upon the swelled part & where the chief disorder is chiefly seated cannot fail of giving relief. In the inflammatory angina plentiful bleeding should accompany their use with copious evacuations by stool by means of cooling laxatives & clysters: and fomentations or poultices of bread & Milk may at the same time be employed externally: if this is inconvenient the part may be rubbed with some emollient relaxing liniment. This disease requires a speedy remedy; for the swelling & inflammation may soon suffocate the patient; especially as part of the trachea & epiglottis are at the same time inflamed: If the Amygdali or glands only are inflamed, we call it the bastard Angina & this is seldom attended with much danger. The same remedys are also indicated in this species and a Gargle may also be used with much advantage composed of some emollient herbs, sweetened w. Honey or Syrup & usually acidulated w. good Vinegar. If the Uvula is too long & relaxed, which the Vulgar call the falling down of the palate a gargle of tincture of Roses or some other very gentle astringent will generally afford relief. In the Angina gangrenosa or ulcerous putrid sore throat Blisters are also highly useful applied externally on the parts affected; for by the irritation they give the direct the humours from the interior & invite them to the exterior parts: But in this disease Evacuations by bleeding & purging are highly improper & sure to destroy the patient: We should on the contrary order them cordial antiseptic Drinks & medicines: of which Wine Whey & other septics of Wine claim the

the first place: as it will generally act as a diaphoretic: likewise the
Acid of Vitriol; peruvian bark, Camomile Tea &c. For a drink
we should use either an Infusion of the bark: or what may answer
better; the acid of Vitriol pretty diluted: Also eating plentifully
of Oranges; Lemons sweetened with Sugar or some other agreeable
refreshing Vegetable fruits would undoubtedly be of considerable service
to persons labouring under this disease.
Blisters are also useful in the Toothach, especially when this is of a rheumatic nature.
If the person hath been subject to the rheumatism, we apply a large
epispastic to the part in which the pain was felt before it attacked
the teeth. Blisters behind the Ears also seldom fail of giving relief in this
case. If the person be plethoric, or if be a pregnant Woman, bleeding is
in general the most speedy remedy: If the toothach returns periodically
& at a certain hour or time of the Day; it is to be treated as an Ague
Intermittent &c: bark will generally afford the sweet relief. If the tooth is
carious & decaying, and the oil of Cloves or some other aromatic inflamatory
oil distilled into the hollow tooth does not relieve the pain, it ought to
be extracted; for it not only affects the other teeth, but renders the person
subject to repeated attacks from colds & other causes. It is also necessary
to extract the tooth, when the membrane surrounding it, or the Alveole
have been inflamed & tend to suppuration: this we discover by the fever
which preceded & attended the disease: the violence & duration of the
pain & from the pulsation of the arteries at the root of the tooth. If the
tooth is not soon extracted the Jaw will either become carious: or Indura-
tions and swellings are formed in the Mandibula: or else a fistulous
ulcer is occasioned either at the root of the tooth or under the Chin: sometimes

pain in the Ears, Gums & faces or head torment the patient, from which he cannot be relieved untill the tooth is extracted. — In all kinds of emption fevers, when the eruptions disappear, Blisters afford considerable relief. — This remedy is also useful when any eyes or ulcers are checked or suppressed. The most violent disorders & fatal symptoms are often produced from this cause: nothing will so quickly remedy them as applying an epispastic to the part that was before affected. Likewise when rheumatic pains fly from the extremities & seize on some of the Viscera then occasioning grievous complaints, we should incontinently apply a blister to the part ~~from~~ which the pain had before occupied. There are Instances of persons subject to the rheumatic matter being attacked w. symptoms of a consumption, from which they were relieved by blistering: if the disorder was brought on by the rheumatic affection having been thrown on the Lungs. From the same cause are sometimes produced violent Colics, which are speedily relieved by blisters, bleeding, emollient glysters & warm fomentations —

In affections of the Eyes & Ears, when they are either painful, inflamed or greatly weakened, blisters near y. part seldom fail of affording relief. In the Sciatica which is a most painful & tedious disorder & from which some never recover during their whole life, Blisters are frequently of singular service. Ointments & spirituous applications will sometimes remove the pain, but often throw it on the bowels & viscera, which destroys the patient. The blister should be large & repeated three or four times, or else we should keep it open for a considerable time: for as the parts are very muscular, & the seat of the disorder is frequently near the bone it is only by a perpetual blister, or such blisters frequently repeated, that we can accomplish a perfectual cure —

Blisters are the most effectual applications in retrocession of the Gout. They should in this case not be healed up, until the paroxysm and is over. If the patient is vigorous & plethoric with a strong full hard pulse, we should at the same time order bleeding, to prevent the disease from becoming fixed. We then order the epispastic to the ankles, and when it begins to inflame or irritate the part, let the patient drink a glass or two of a generous wine & at the same time order him a Bolus of 10 or 15 grains of the volatile Alkali, and repeat it if necessary. This either determines the Gout into the foot, or the blister at least causes such a derivation of the humours, as to prevent worse consequences. Persons subject to the Gout should attentively consider the time of the year in which it usually attacks them: for whatever disease afflicts them at that particular period, the Gout generally is the acting cause. If thus if he be attacked with a pleurisy, peripneumony, Lethargy Apoplexy &c the remedies usually indicated in the diseases will be of little or no service; but our endeavours should be exerted to bring the Gout into the extremities. Sometimes it happens that the Gout does not fly to the bowels, but fixes itself in some muscular part underneath as in the arm, shoulder or in the small of the back: In this situation it is indeed seldom attended w. danger, but often becomes exceedingly tedious & painful. In this case it is often necessary to put a blister immediately on the part affected before we can get the Gout to move.

When the Lungs are loaded with Mucus, and the patient is threatened w. suffocation, a blister applied between the shoulders seldom fails of giving them considerable relief. — In the fit of Spasmodic Asthma therefore & in the Catarrhus Senilis. it very frequently necessary to have recourse to these applications

In the Colica pictonum Blisters applied to the Thighs often afford very considerable relief: in all kinds of spasmodic or nervous colics & indeed in Spasmodic disorder in general, blisters claim the foremost place in the list of medicines: It is also from their antispasmodic Virtue that they seldom fail of giving relief in Hemorhages particularly of the Uterus & in Vomiting of Blood: they also at the same time cause an Irritation in the part to which they are applied & by that means excite the blood & humours more copiously to that part & thus take off the determination to the ~~place~~ Vessels from which the hemorhage issues. In paralytic affections blisters are of considerable use by their stimulus: and as we apply them constantly to the diseased part, the afflux of humours occasioned by the epispastics does not contribute a little to the Cure. — A suppression of Urine & an ~~incontinence of~~ incapacity to retain it are very frequently owing to the same Cause: When the bladder is labouring under a paralytic affection it is not able to contract as is necessary to the stimulus from the Urine, by which this in a healthy state is evacuated & then a suppression of Urine takes place that requires the constant application of the Catheter: ~~When the~~ But when the Neck of the bladder is paralytic it cannot contract so as to hinder the Urine from passing into the Urethra & therefore the person is afflicted w.th a constant Mictiveduim Urina: Both Disorders you see then are owing to the same Cause, which produces very different effects: In what case however large epispastics applied to the Os Sacrum very often affords a certain relief. — It is chiefly Children that are afflicted w.th an incapacity of retaining their Urine: Grown persons also on receiving some violent Injury are at times afflicted w.th a palsy of the Bladder, that requires the application of this remedy

Apoplexies are also indicated in the Apoplexy: This is by Authors aptly divided into two species: We shall conclude ~~these~~ Lecture, with a few observations on each. They are called the sanguineous & serous: In the latter the face & lips are pale: the pulse is small & low: & the extremities oftener cold than warm: In the sanguineous, the reverse takes place. In both the patient falls down suddenly and ~~loses both~~ is deprived of sensation & Motion: the breathing & pulse only remain; the former difficult. Some are at the same time taken with a violent fever sometimes soon recover ~~their~~ sensation & motion; but often ~~in~~ they lose it in a few days. The attacks are generally sudden; tho it may generally be foretold many weeks several Months before it takes place by the following Symptoms: ~~The~~ Heaviness of the head: decay of strength without any manifest cause: some unusual vacuation ensues: the tongue loses part of its Volubility: frequently an impediment in the Speech: the Voice alters: the Memory fails, the Countenance changes & they are frequently attacked with a giddiness. In the sanguineous Apoplexy all stimulating medicines are improper, for they increase the action of the heart & arteries & thus add to the disease: All our aim is to diminish as quickly as possible the Volume of blood in the brain, before some blood vessel bursts & the blood is poured into the head: and in case the effusion hath already taken place our intention must be to increase the absorption: To cure the apoplexy therefore we must diminish the quantity of blood in the head: to relieve the loss of motion, which is often the consequence of an apoplectic fit, by increasing the absorption: and lastly we endeavour to prevent its return. We in the first place order large bleeding from the jugular Vein in apoplectic or from, & repeat it untill the pulse sinks, the respiration comes easier; the face turns pale & the swelling in the Neck lessens: Deep incisions or scarifications in the Neck: application of leeches behind the ears: in persons who have been subject to the piles we apply them to the hemorrhoidal Vessels: A Clyster of Water oil Sugar & Salt is to be immediately applied & repeated frequently; but soon as the patient can swallow we order him a dose of neutral Salts: his head should be placed high, & his feet be in a

speedily performed in order to encourage a swelling of the legs: the swelling should be
continued if possible untill he recovers sensible motion; otherwise a lameness
will remain. It is necessary to take notice that the boller & Cloaths
& garters must be loose: and the Windows thrown open to admit the air. Ye
Dispatch is necessary; for a few Minutes determine the patients fate. It is
necessary to reduce the patients strength considerably; and always keep it be
low par; for if he recovers his full vigour, he will be exposed to a new at
tack. After the paroxysm goes off a fever generally comes on: for this we
do nothing but keep the bowels open & y. body cool: unless the paroxysms are
violent; the pulse hard; the countenance flushed, & the Neck swell: we then
must have recourse again to bleeding & a cooling purge. Persons who have had
an attack of the apoplexy ought be sparing in y. diet: live much at Vegetables:
use no spices, spirits, Wines or Coffee: Their drink should be Water, Orgeat,
Milk Whey: frequently take a small dose of Cremor Tartar to keep the body
cool & open. Take Exercise; but w. moderation; never in boisterous & bad Weather:
When they begin to perspire, not take rest untill they get into a moderate
warm chamber. Never walk in the rays of the Sun & in the Summer use a
Umbrella. Avoid Smoak & disagreeable Vapours. Not sleep after Dinner; Not
take long sleep: keep the head rather cool than warm: Coughs & Catarrhs
should be immediately checked. They should neither sing or hollow loud: not lab
our upon lifting any weight: neither bow the head or stoop much. As soon
as they perceive an uncommon redness in the Eyes or Cheeks; and the feel their
Cheeks tight, the not tied harder than usual, they are threatened to
an attack & should therefore immediately have a Vein opened & take a
dose of physick. If the piles are suppressed, the patient should not have
recourse to aloetic pills, but encourage the discharge by applying Leeches
——— In the serous apoplexy: the head should be laid high &
the other circumstances be observed that I mentioned under the former

head: We should order bleeding, merely to afford a temporary relief. But large & repeated bleeding is hurtful. A piece of sugar impregnated w. compound Spt. of Lavender is to be laid under the tongue: a stimulating Glyster of Salt is to be applied & a smart purge to be immediately given. Large blisters are to be applied to the Back & Legs. The fever which is ~~the consequence of the~~ comes on after the fit, should be treated in the manner related above & nearly the same regimen be observed as in the former case: but the patient may in this case sometimes take some drops of the Liquor C. C. succinatum or Volatile drops

The only Class of remedies that still remains to be treated are the Antiseptics, or Antiseptics, more generally known under the Term of Antiseptics. Few have
ever or now of the substances that belong to this Class but what have already
been treated of on various occasions during the course of these Lectures:
the Diseases in which they are indicated and the manner of their opera-
tion remains still to be considered; previous to that however we must
premise something on the generation of putrid diseases —
All putrid ~~dis~~ acute diseases are so much in their nature, & require
in every respect so similar a method of treatment, that what is said
of one applies almost without exception to the others: if we only make
allowance for the difference of the parts which are more affected in one
disease than another. — There is a great variety of the putrid disorders
for which Physicians have continued various names & appellations: a
bare enumeration of the Names will be sufficient, as I do ~~not~~ intend
to treat ~~but~~ only in general terms of the nature of putrid diseases
& the mod. ⅌. must ~~put~~ or correct putrefaction — These are the
febris putrida biliosa; the synochus putrida; biliosa; Amphemerina;
Hemitritea; Lypiria febris; febris synopalis; Elodes; Epiala; Dysenteria;
Febris Icterodes; Typhos; Febris maligna vel petechialis; Angina gangre-
nosa: All of them I say are similar in their Nature: the same fa-
general cause exists in each of them; but modified & varied by par-
ticular circumstances & accidents: Thus for instance the same
Cause will in one person produce a bilious putrid fever; in another
a malignant sore throat; in a third a dysentery &c — In all of
them both the fluids & solids of the body are affected & have evidently
a tendency to putrefaction: how this is produced & the Causes that
give rise to its generation shall now be the Subject of our inquiry.
We shall first treat of the occasional Causes; & from these deduce the pro-
ximate

I must in this place once more repeat the observation which I have sevral times made in the course of these Lectures that the fluids of our body have a natural tendency to putrefaction & are only prevented from it by a quantity of acrident aliment that we use from time to time; for if a person were deprived of all kind of Nourishment we should find that he perishes of a putrid fever. Hence we see that in Cities & fortresses which sustain a long siege & at length want the necessaries of life, the plague or some other putrid disease generally makes its appearance, that ceases immediately on the siege being raised, and a supply of food being provided. Persons also living too much on animal food are exposed to the attack of putrid diseases: this is illustrated by an account of the plague (usually called Turkey) published in the philosophical transactions where it is observed that the Armenians are least of all subject to this disease for they eat very little meat; but make use of Onions, Leek, Garlick & Wine. — That the humours of our body are more or less putrescent according to the Aliment we take appears from Dr Young's experiment on the Milk of a Bitch: When the animal was fed on Meat, the Milk was alkalescent; but on being kept for several days on Vegetable food, the Milk was evidently acrescent. Impure & corrupt food likewise tends to bring on putrid diseases: Vandermyer's account of the diseases of Breda confirms this: He observed that during the siege of that town, the Inhabitants were reduced to the necessity of living on impure & bad food; which soon brought on a most destructive plague, whilst the Soldiers who besieged the place & had plenty of good provisions, were altogether free from the disease. It is an observation universally established that persons of a full ~~habit~~ habit of body, when the functions are performed with Vigour, are more liable to be attacked w. putrid diseases, than those of a lax or weak habit

It is a well established fact, that if a young healthy & strong person goes from the northern parts of America to the West Indies: if his fibres are well braced & his blood denser & richer, he is much more liable to be attacked w. the putrid & yellow fevers that rage in those Islands, than a person of a weakly constitution & relaxed habit. Violent exercise will also act as an occasional cause: likewise hot spicy food; stimulating medicines, Rum & Spirits w. many other things of a similar nature, not by reason they are of a septic nature, for they have an opposite quality; but because they first rarefy the solids & increase the impetus of the fluids. Heat & long exposure to the Sun have in all ages been considered as encreasing the putrefactive tendency. — These are to be considered as remote causes that dispose to the putrid disease; but it requires something more & exciting cause to produce the disorder. Whilst therefore the functions & secretions are carried on properly, the person will still enjoy a proper share of health, notwithstanding he is continually exposed to the causes first mentioned; but as soon as the perspiration is checked or suppressed, the disease is almost sure to follow: Whatever therefore hath a tendency to check the insensible perspiration, may also be ranked amongst the remote causes of ~~the~~ putrid diseases. Hence when persons in a warm bed are suddenly exposed to the cold; they generally suffer ~~but~~ a sudden cold when the body is heated, it always attended with bad consequences: Hence the rise of disorders arising from damp cloaths; in hot weather, or lying down on the damp earth: Hence wearing dews & cold ~~upon~~ after a hot day produce various ills. For the same reason the Autumn seems to. Diseases: whilst the morning & evening colds chill unguarded persons, who cloath themselves only for the hot Sun at Midday. — Of Particular affections of the Mind anger and

sadness also diminish the perspiration: and Dr Lind in his treatise on the diseases of Seamen observes that fear alone will sometimes produce malignant fevers. Long continued watchings are attended w.th the same effects. But all these are nothing in comparison to warm moist Weather joined with putrid exhalations from Vegetables or Animal substances. For warm moist air, not impregnated w.th putrid exhalations may indeed produce intermittent & other fevers; but hath no particular tendency to occasion putrid diseases. This is finely illustrated by an observation of Dr Pringle in his Diseases of the Army, where he tells us that upon the English troops being mustered in England when they were exposed to the noxious vapours from lakes & ponds they became extremely sickly, whilst the Vessels who lay at an Anchor at some distance from the Shore & out of the reach of the putrid Vapours were quite healthy; whilst the Landsoldiers perished in great Numbers. Lancisius, an eminent physician of Rome, also observes that that part of Rome which is exposed to the southerly Wind that blows over many adjacent Ponds & Morasses is subject to putrid diseases; from w.ch the other parts of the City are free. This is indeed so universally known, y.t exposed travellers to or from Rome on that side of the City will sleep within 20 miles of it for fear on acc.t of the unhealthy Situation: the late Lord Albemarle neglected this caution, & paid for it with his life. Dr Lind also observes that Sailors are healthier when they are continually exposed to the dashing of the Waves, than they are in the Harbours, or when stationed near the Shore, where they are exposed to the putrid exhalations. It is likewise observed that the higher the Ships on the Coast of Guinea advance up into the Country, the more sickly are the Sailors; whilst those that lay out alone or in the Mouths of large Rivers, at a distance from the Shore, enjoy perfect health.

Heat & Moisture alone does not appear to occasion putrid diseases; but it is necessary that putrid exhalations should be combined with those causes. This is further illustrated by the observations of physicians in all ages: for Galen takes notice that many situations will produce these diseases. The bodies of men slain in Battle & remaining unburied & putrefying also give rise to putrid diseases. The carcass of Animals, or fish dying & putrefying on the shores, have been known to cause a pestilence: the narrowness & filth of streets; corrupted corn, putrefied Vegetables, a crowd of people confined in Ships & Jails, have all been frequently observed to occasion the most fatal malignant disorders. I have given us an observation relating to a City in France that was surrounded with a ditch filled with Water, the Inhabitants of which place enjoyed as good health as any people whatever; but by some accident the water in the ditch failed & a stench was emitted from the various matters in the bottom of the ditch that filled the air with putrid exhalations that soon occasioned putrid diseases: but on filling the ditch again with Water these diseases disappeared. Rapalgueist in his Travels to the East observes that during the time the River Nile overflows the whole Country of Egypt the Inhabitants enjoy a great share of health; but on the Waters subsiding the whole Country appears one continued Marsh filled with putrefying animal & vegetable substances that replenish the air w. their noxious exhalations, and occasion Dysenteries, with other putrid diseases. But when the Water continues at a certain height above the surface of the earth, there is no putrid fermentation can take place & the Country remains healthy; but whenever it subsides to a level w. the surface, noxious exhalations take place. Of this we have instances sufficient in this Country: Philad^a is in a manner surrounded w. Water, & is extremely healthy; but three or four Miles lower down

then is very considerable difference. For in the Autumn, when the Water in the Ditches is evaporated, putrid stinking Vapours arise from the various substances lodged there, which cause occasion fevers, & other diseases of which we in the City have little or no knowledge. And even that part of the Country continues tolerably healthy during the Winter, Spring & great part of the Summer, whilst the Ditches are almost filled with Water. — The same happens in the lower Counties & Maryland: We find the people inhabiting those parts continue tolerably healthy even through the greatest heats in the Summer and untill they Waters are filled wth putrid exhalations on the evaporation of the Water in the Morasses, ponds & ditches; when the Inhabitants in general look like so many people just risen from the dead, and a healthy countenance is a rare phenomenon, particularly amongst the lower kind of people. At the same time we see that those who live near flowing & rapid streams or Rivers are as healthy as any people in the World; and only those and such who are surrounded wth Morasses & stagnated Waters. It is therefore not so much humidity & heat as the putrid exhalations which give rise or furnish Matter for putrid diseases. I have thus enumerated the various remote & occasional causes of putrid diseases & these will at once shew us in what the proximate cause is to be placed. I think there cannot now be a doubt but that this consists in a putrid ferment taken into the blood, or generated within the body, converting sooner or later, both fluids & solids, into its own nature, in the same manner as all other ferments do. This is the opinion of Pringle, Huxham, and very rational practitioners since the time of Hippocrates to the present: & confirmed by the manner in which the Disorder is produced: ~~which~~ & further established by the Symptoms & phenomena occasioned in the system by ye disease

All the secreted & excreted fluids are evidently putrid; the blood is discharged from the nose, uterus, kidneys & other parts of the body: When taken from a vein it is so thin & dissolved, that it does not coagulate in the Vessel or cup into which it is drawn; livid purple spots appear in various parts of the body, and at the close of the scene the whole frame is may be said to be a putrid Carcass

Some Physicians have doubted if whether putrid diseases are always contagious: I think we may answer in the Negative, & to me they appear only to be contagious when persons have been exposed to the same occasional causes with those who labour under. This however is merely an opinion; Intricately for us we are situated in this place do not often afford opportunities to make observations upon these diseases; it is besides a dispute of such a Nature that any person may easily satisfy himself about on consulting the diff. Authors who have treated of these disorders: I shall add a description of a disease to prove that putrid matter will convert our fluids into their own Nature; and yet are not contagious, in the strict sense of the Word, if we are allowed to distinguish between Contagion & Infection. In the year 1763 an dreadful uncommon disease appeared in the Island of Antigua which attacked the Negroes and Cattle. It destroyed a great number of Oxen, Sheep & Hogs in every short time: At length it attacked the Negroes, most of those seized in a dreadful period. The White people were free from it: there was but one person of q. Whites attacked with it; & this was the Gentleman who gave the accl. of this disease; he probably catched it from ~~inf~~ opening the Sheep that had died of the distemper. The disease was highly putrid, with Boils or Buboes resembling those that accompany a Pestilence. It attached ~~only~~ particular Negroes & those only who eat of the Meat of the Animals q. had died of the distemper. This affords us an Instance when eating of infected meat will communicate the same disease to

person who makes use of it: and it must therefore act on the fluids as well as solids; probably indeed the primary action is on the fluids. As all putrid diseases are similar in their nature & origin, so they require in a great measure the same method of treatment. In general we endeavour by gentle evacuations to cleanse the stomach & bowels & free them from the load of putrescent matter with which they are usually oppressed: then give such remedies as will resist the putrefactive tendency, and lastly assist & support the strength of the patient. — Many physicians advise ~~the use of~~ bleeding, vomiting & purging in the beginning of the disease. — Bleeding can certainly contribute little or nothing to the cure: it can only be allowed when the patient is robust & vigorous, the pulse hard, the heat intense & we have reason to think an inflammatory state of the system which is sometimes the case even in putrid diseases on their first attack. The best practitioners however agree that large or repeated evacuations by bleeding are by no means proper: and when it is necessary advise that we should use it with the utmost prudence & circumspection. — Many advise vomits in the beginning of the disease, but Dr Hillary who hath wrote a good book on the diseases of the Windies observes very justly that there is seldom occasion to give emetics med. in these diseases; for there is a constant nausea & frequently vomiting, which may be sufficiently promoted by large draughts of Camomile Tea, without racking the constitution in the manner vomits would do. He therefore gave his patients large potations of Camomile Tea & between whiles some of the acid of Vitriol, to correct the putrescency & strengthen the stomach & system. Stimulating purgatives are also improper: we should indeed by all means keep the body open by an infusion of Tamarinds, Prunes, or drinking plentifully of cooling acidulated Diaeta, it will

at the same time refresh the patient, resist putrefaction & keep the body open. For this purpose the patient should also eat plentifully of ripe fruits & drink large quantities of sherbet, or agreeable acidulated drinks. If after the stomach hath been well washed with these liquids, a Nausea, Oppression & Anxiety should still remain our patient may be ordered to take an Infusion of Mint & Claret in small quantities, but frequently repeated, and at the same time continue in the use of the Elixir Vitriol. To keep the body open lenitive Glysters may also be administred from time to time: We should however be always on our guard against a lax; & if this should happen to come on we ought to endeavour to check it by stewing Claret & Cinnamon; & letting the patient frequently drink of it: A very palatable, refreshing & cordial drink may also be made by infusing roasted oranges in Claret diluted w. Water & letting the patient drink of it frequently. If this however should be insufficient to check the purging we may have recourse to an Infusion of the bark, to which we add a small quantity of the Tincture of opium.

~~Found that~~ Whether Blisters are useful or not ~~both~~ in putrid diseases hath been & still continues to be debated. Some reject them as of no use; others place great faith in them. We may observe that when the disease attacks a particular part & thus becomes in a manner a local affection, blisters may usefully be employed with advantage. For instance in the Anginal gangrene, when the putrescency is deposited on a particular part we often experience great effects from blisters; for by ye Irritation they draw the humours to the external parts & thus relieve the internal parts: They may also ~~sometimes~~ be used when the strength of the patient begins to sink & he hath need of stimulants. Physicians have been deterred from using them because the blistered part, they say, is apt to become gangrenous: This does indeed sometimes happen particularly when the patient is in the last stage of the disease; but when a gangrene from this cause hath been known to save the patients life, by giving the humours a gradual evacuation.

To resist the putrefaction, which is the second Indication in the disease, we persist in the use of the med.s & drinks first mentioned: and at the same time order the Patient to take repeated Doses of the Vl. of Vitriol: and also a Vinous or Watery decoction of the bark. We cannot ~~give it~~ generally give it in Substance, as the Stomach will not bear it, & it hath been known to occasion violent purging. but in decoction it answers very well: we should not limit the dose, but endeavour to make the Patient take very large quantities & indeed as much as he can. — Venesection & the Injections of Wine are also of great consequence: they excite a dea, khorrois & frequently take of wittiness: If the patient is delirious, or complains much of headach, w.d a wild staring look, we should have his head shaved, and washed frequently w.d Vinegar & Water; this application may also be used to his hands, Arms, Breast Neck &c — Pediluvia ~~to the feet~~ or warm fomentations to the hands & feet have also been the means of saving many a person's Life: Dr. Fuller observed to us in one of his Lectures, that he saved more Lives by warm fomentation, than by any other Medecine whatever. — In the Ulcerous sore throat Dr. Fothergill recommends a gargle prepared of Barley Water to which he adds Honey, Vinegar & some of the Tinctura of Myrrh, ~~which is greatly~~ & orders it to be injected by means of Syringes: which method is highly commended by Dr. Pringle: who speaking of the Angina maligna, says: I lay the chief stress of the cure upon gargling in this manner. In all cases I desire five or six syringefulls to be injected, one after another, as far into the throat as the patient can bear, & to repeat the Medecine three times a day. The fumes of strong Vinegar should also be frequently in the day admitted into the Mouth & throat: and before the patient is to swallow any thing he should wash his Mouth & gargle his throat with some of the above first mentioned Liquid —

in putrid fevers the patients are very desirous of cold drinks: there is no reason for prohibiting them: cooling delaughts will frequently check the Vomiting, when nothing else will: & they always refresh the patient & strengthen his Stomach. Persons labouring under putrid diseases, have generally a very great aversion to food: we should not however on that account refrain from giving them nourishment: it is absolutely necessary that they should especially take something to support their strength & spirits: for this purpose we may order them Sago Panada & whatever hath a tendency to resist putrefaction. The eating plentifully of ripe fruits is of the utmost consequence to them. But we should above all endeavour to give y patient a constant supply of fresh air; for this is of the utmost consequence to him; and no one can recover without it; it hath also been observed that however violent putrid disorders raged in hot weather, they always became more infinitely milder as the weather grew cool: Nevertheless Sir Lind observed that the sick person should be kept in a spacious apartment, where he can breathe pure & fresh air; nor should he be stifled w. too much covering. His linen & bedcloaths should also be frequently changed & aired. When the patient is recovering we should guard against relapses: he ought therefore for some time persist in the use of the Vitriolic acid; peruvian bark; fresh vegetable fruits; Wine and nourishing nourishment as is of easy digestion & not inclined to that putrefactive fermentation: He ought also at proper intervals take a gentle dose of Rhubarb, to evacuate the bowels & eliminate any putrid collavies that might have remained; or prevent the future accumulation of it. Moderate exercise is also highly necessary; & when his strength is somewhat restored, bathing in cold water, is not only highly refreshing but almost a certain preservative against the return of the disorder.